







Digitized by the Internet Archive  
in 2024 with funding from  
University of Toronto

<https://archive.org/details/39282908020042>











Catalogue no. 75-001-XPE



# PERSPECTIVES

**ON LABOUR AND INCOME****SPRING 2007**

Vol. 19, No. 1

- REVISITING WEALTH  
INEQUALITY
- WORK HOURS  
INSTABILITY
- CANADA'S  
UNEMPLOYMENT  
MOsaIC, 2000 TO 2006
- THE ABORIGINAL  
LABOUR FORCE IN  
WESTERN CANADA
- YOUNG PENSIONERS
- DEFINING RETIREMENT
- VARIA  
*Personal debt*

Statistics  
CanadaStatistique  
Canada

Canada



## *At Your Service...*

### How to obtain more information

Specific inquiries about this product and related statistics or services should be directed to: *Perspectives on Labour and Income*, 9 A-6 Jean Talon, 170 Tunney's Pasture Driveway, Statistics Canada, Ottawa, Ontario, K1A 0T6 (telephone: (613) 951-4628; e-mail: [perspectives@statcan.ca](mailto:perspectives@statcan.ca)).

For information on the wide range of data available from Statistics Canada, you can contact us by calling one of our toll-free numbers. You can also contact us by e-mail or by visiting our website [www.statcan.ca](http://www.statcan.ca).

National inquiries line	1 800 263-1136
National telecommunications device for the hearing impaired	1 800 363-7629
Depository Services Program inquiries	1 800 700-1033
Fax line for Depository Services Program	1 800 889-9734
E-mail inquiries	<a href="mailto:infostats@statcan.ca">infostats@statcan.ca</a>
Website	<a href="http://www.statcan.ca">www.statcan.ca</a>

### Ordering/subscription information

This product can be ordered by

- telephone (Canada and United States) 1 800 267-6677
- fax (Canada and United States) 1 877 287-4369
- e-mail [infostats@statcan.ca](mailto:infostats@statcan.ca)
- mail Statistics Canada  
Finance Division  
R.H. Coats Bldg., 6th Floor  
100 Tunney's Pasture Driveway  
Ottawa, Ontario K1A 0T6
- In person from authorised agents and bookstores

When notifying us of a change in your address, please provide both old and new addresses.

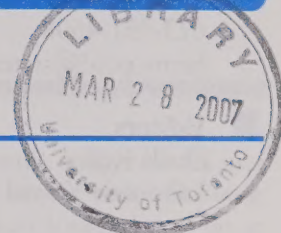
### Standards of service to the public

Statistics Canada is committed to serving its clients in a prompt, reliable and courteous manner and in the official language of their choice. To this end, the Agency has developed standards of service. To obtain a copy of these standards, please contact Statistics Canada toll free at 1 800 263-1136. They are also published on [www.statcan.ca](http://www.statcan.ca) under About Statistics Canada > Providing services to Canadians.



# PERSPECTIVES

ON LABOUR AND INCOME



## ■ Departments

### 3 Highlights

### 60 What's new?

### 65 Varia

*Personal debt in Canada and the U.S.*

## ■ Articles

### 6 Revisiting wealth inequality

*René Morissette and Xuelin Zhang*

Major changes in the wealth structure have taken place over the last two decades. Between 1984 and 2005, virtually all population subgroups experienced a greater increase in average wealth than in median wealth, suggesting that Canadian families are becoming increasingly unequal in their capacity to deal with income shocks. The increase would have been even greater without the marked aging of the population.

### 18 Work hours instability

*Andrew Heisz and Sébastien LaRochelle-Côté*

Discussions related to work hours are typically driven by cross-sectional studies. Much less is known about the longitudinal perspective and the persistence of long hours or periods of underemployment. The annual hours of employees are examined over a five-year period to determine what proportion experience variable work years and how their well-being is affected.

### 22 Canada's unemployment mosaic, 2000 to 2006

*Ernest B. Akyeampong*

The unemployment rate is a well-known barometer of labour-market health. The rise in the national unemployment rate in the years immediately following the high-tech meltdown has been replaced by sustained annual declines. Of course not all parts of the country have shared equally in the improvement. The article tracks the range of unemployment rates for local labour markets (the 28 census metropolitan areas [CMAs] and the 10 provincial non-CMA areas). It also looks at the relative durations of unemployment.

**Perspectives on Labour and Income** (Catalogue no. 75-001-XPE; aussi disponible en français: *L'emploi et le revenu en perspective*, n° 75-001-XPF au catalogue) is published quarterly by authority of the Minister responsible for Statistics Canada. ©Minister of Industry 2007. ISSN: 0840-8750.

PRICE: CAN \$20.00 per issue, CAN \$63.00 for a one-year subscription.

#### Shipping charges outside Canada:

	Single issue	Annual subscription
United States	CAN \$ 6.00	CAN \$24.00
Other countries	CAN \$10.00	CAN \$40.00

All prices exclude sales taxes.

All rights reserved. This product cannot be reproduced and/or transmitted to any person or organization outside of the licensee's organization.

Reasonable rights of use of the content of this product are granted solely for personal, corporate or public policy research, or for educational purposes. This permission includes the use of the content in analyses and the reporting of results and conclusions, including the citation of limited amounts of supporting data extracted from this product. These materials are solely for non-commercial purposes. In such cases, the source of the data must be acknowledged as follows: Source (or "Adapted from", if appropriate): Statistics Canada, year of publication, name of product, catalogue number, volume and issue numbers, reference period and page(s). Otherwise, users shall seek prior written permission of Licensing Services, Client Services Division, 100 Tunney's Pasture Driveway, Statistics Canada, Ottawa, Ontario, K1A 0T6.

Indexed in the *Canadian Index*, *Canadian Periodical Index*, *P.A.I.S. International*, *Sociological Abstracts*, *Econlit*, *Canadian Business and Current Affairs* and *Employee Benefits Infosource*. Also indexed in French in *L'Index de l'Actualité* and *Point de Repère*.



## Managing Editor

Henry Pold

613-951-4608

henry.pold@statcan.ca

## Editors

Sheila Kulka

Lahouaria Yssaad

## Data Services

Joanne Bourdeau

Laura Fraser

## Production and Composition

Ann Trépanier

Heather Berrea

Annamma John

## Printing

Dissemination Division

## Cover Art

Dominique Pérusse

## Symbols

The following standard symbols are used in Statistics Canada publications:

- . not available for any reference period
- .. not available for a specific reference period
- ... not applicable
- p preliminary
- r revised
- x confidential
- E use with caution
- F too unreliable to be published

The paper used in this publication meets the minimum requirements of American National Standard for Information Sciences – Permanence of Paper for Printed Library Materials, ANSI Z39.48 – 1984.

## 30 The Aboriginal labour force in Western Canada

*Jacqueline Luffman and Deborah Sussman*

By 2017, Aboriginal persons of working age (15 and older) are projected to number close to a million—about 3.4% of the working-age population overall. With anticipated labour shortages in many areas, this growing population may constitute an important pool of workers. Aboriginal and non-Aboriginal populations in Western Canada are compared in terms of employment, occupational distribution, and skill level.

## 45 Young pensioners

*Ted Wannell*

Since they entered the scene, baby boomers have been shaping social and economic structures. Now on the cusp of retirement, they may once again force change on the labour market. Many aspire and can afford to retire relatively young, raising concerns about labour supply and public pension programs. But increasing longevity in good health may persuade some to extend their working life. Trends in pension uptake between ages 50 and 60 and post-pension employment during the 1990s and the first part of this decade offer some clues as to the direction baby boomers may take.

## 55 Defining retirement

*Geoff Bowlby*

Even though the retirement wave will have significant labour market consequences over the next 20 years, no regular statistics are produced on retirement or the retired. Part of the problem stems from lack of clear definitions. For some, retirement means complete withdrawal from the labour force while for others it entails part- or even full-time work. The article examines the challenges faced by statistical organizations in measuring retirement and offers several recommendations to inform a discussion for arriving at international standards.



# Highlights

*In this issue*

## ■ Revisiting wealth inequality ... p. 6

- After increasing between 1984 and 1999, the gap between families in the top and bottom 20% of the wealth distribution continued to widen between 1999 and 2005. The wealthiest 20% of families held 75% of total household wealth in 2005, compared with 73% in 1999 and 69% in 1984.
- Part of the increased wealth among families in the top 20% was fuelled by growth in home equity. In both 1999 and 2005, the vast majority of these families—at least 95%—owned a house. Among homeowners, the median value of the principal residence rose \$75,000 between 1999 and 2005, reflecting the sharp increase in housing prices.
- While the median wealth of families overall rose 26% between 1984 and 2005, it fell substantially among those in which the major income recipient was aged 25 to 34. In 2005, these families had median wealth of \$13,400 (in 2005 dollars), much lower than the \$27,000 and \$17,400 registered in 1984 and 1999 respectively.
- The decrease in wealth among young families occurred mainly because the cumulative earnings of young men—the sum they receive over several years—fell substantially between the 1970s and the 1990s. Over the 1994-to-2004 period, their cumulative earnings averaged roughly \$267,000, much less than the \$330,000 for the 1973-to-1983 period.

## ■ Work hours instability ... p. 18

- Slightly less than half of employees worked roughly the same hours each year between 1997 and 2001. About one in three worked a standard, full-year full-time schedule in every year and 15% worked a shorter year.

- While it was common to work longer hours in a given year, it was rare to do so year after year. One in five workers worked longer hours in at least one year between 1997 and 2001, but less than 1% did so in every year.
- Typically, annual work hours varied by about five full-time work weeks. However, work hours variability was highly polarized with 1 in 5 employees having virtually none and 1 in 4 having variability exceeding eight weeks per year.
- Work hours instability was higher among employees in small firms, those with no pension plan, and those not covered by a collective agreement.

## ■ Canada's unemployment mosaic, 2000 to 2006 ... p. 22

- In terms of having low unemployment rates, the best areas since 2000 have been primarily in the Prairies—Calgary, non-CMA (census metropolitan area) Alberta, and non-CMA Manitoba. The poorest performers have been non-CMA Newfoundland and Labrador, Prince Edward Island, non-CMA Nova Scotia, non-CMA New Brunswick, and Windsor.
- In both 2000 and 2006, Calgary registered among the lowest unemployment rates (4.5% and 3.2% respectively); the highest rates were recorded in non-CMA Newfoundland and Labrador (21.3% and 19.3%).
- Of the 16 CMA and non-CMA areas that saw a deterioration in their unemployment rate ranking between 2000 and 2006, 9 were in Ontario. Of the 5 CMAs with the largest drops, 4 were in Ontario's Golden Horseshoe—Oshawa, Hamilton, Toronto, and Windsor.



- Unemployment duration showed signs of improvement between 2000 and 2006. At the national level, it fell by about 3 weeks, from 19.8 to 16.7. Declines were also registered in most areas—33 of the 38 considered.

## ■ The Aboriginal labour force in Western Canada ... p. 30

- By the end of 2017, Aboriginal persons of working age (15 and older) are expected to number close to a million—about 3.4% of the working-age population. In Western Canada, Aboriginal (off-reserve) employment grew 23% between 2001 and 2005, compared with only 11% for non-Aboriginals.
- While the unemployment rate gap narrowed over the period, the Aboriginal rate remained 2.5 times that of the non-Aboriginal labour force in 2005.
- The effect of postsecondary education on employment is particularly strong for Aboriginal women with a university degree. Indeed, these women had an employment rate 11 percentage points higher than non-Aboriginal women.
- Most of the growth in the Western off-reserve Aboriginal labour force was dominated by the three largest occupational sectors: sales and service (35%); business, finance and administration (19%); and trades, transport and equipment operators (18%).

## ■ Young pensioners ... p. 45

- Although public retirement pensions cannot be collected until one's seventh decade (age 60 for the Canada and Quebec Pension Plans, and 65 for Old Age Security), many private pension plans allow long-serving employees in their 50s to draw benefits. Tax data indicate that about one-fifth of workers begin collecting benefits from such plans before their 60<sup>th</sup> birthday.
- The pension take-up rate is very low (less than 1%) from ages 50 to 54. It spikes at age 55 (5% for men and 4% for women) as many plans

commence unreduced benefits at this milestone, given sufficient tenure. This peak is not surpassed until workers exit their 50s.

- About half of young pensioners worked for pay the year after they began receiving their pension. However, much of that work was either part-time or intermittent since only 30% earned at least \$5,000. Men were more likely than women to surpass the \$5,000 benchmark (34% versus 26%).
- The probability of non-trivial re-employment falls as the age at retirement increases. Those who retired at 50 were almost twice as likely as those retiring at 59 to earn at least \$5,000 in the following year.
- Very few young pensioners turn to self-employment as a significant source of income. Less than 1 in 10 earned some self-employment income, and 1 in 20 or less earned at least \$5,000.
- Early pensioners generally retired from high-paying jobs. Their average earnings in the year before retirement were at least 50% greater than those who did not retire. Among women, the post-retirement income of young pensioners exceeded the income of those who remained in the workforce.
- Young pensioners typically bring in about two-thirds of their pre-retirement income the year after they begin collecting their pension—very close to the 70% replacement rate recommended by many financial analysts. Pension income accounts for a greater proportion of the total income of women in this group (66% in 2004 compared with 61% for men).

## ■ What's new? ... p. 60

### ■ From Statistics Canada

Low-income rates among immigrants

Regional differences in work hours

Effects of international mobility on individual earnings

Earnings losses of displaced workers

Changes in provincial labour productivity



Labour productivity, hourly compensation, and unit labour cost

Wage differences between male and female university professors

#### ■ From other organizations

Tariff reductions and workers' wages in protected industries

Employment protections and productivity

Income splitting among the self-employed

Legal environment and high-performance work systems

Education and self-employment: Changes in earn-

ings and wealth inequality

R&D composition and labour productivity growth

The role of labour market information for adjustment: International comparisons

Work while in high school: Labour market and educational attainment effects

#### Perspectives

**Subscribe to Perspectives on Labour and Income today!**

**Save  
by extending your  
subscription!**

Save 20%  
by subscribing for 2 years!  
Only \$100.80 (plus taxes)

Save 30%  
by subscribing for 3 years!  
Only \$132.30  
(plus taxes)



#### MAIL

Statistics Canada  
Finance Division  
100 Tunney's Pasture  
Driveway, 6th floor  
Ottawa, Ontario  
Canada K1A 0T6



#### PHONE

1 800 267-6677

Quote PF026100



#### FAX

1 877 287-4369  
(613) 951-0581



#### E-MAIL

Infostats@statcan.ca

Name \_\_\_\_\_

Company \_\_\_\_\_ Department \_\_\_\_\_

Address \_\_\_\_\_ City \_\_\_\_\_ Province \_\_\_\_\_

Postal Code \_\_\_\_\_ Phone \_\_\_\_\_ Fax \_\_\_\_\_

E-Mail address \_\_\_\_\_

#### METHOD OF PAYMENT

Charge to my: ☐ MasterCard ☐ VISA ☐ American Express

Card Number \_\_\_\_\_ Expiry Date \_\_\_\_\_

Authorized Signature \_\_\_\_\_

Cardholder (Please print) \_\_\_\_\_

☐ Payment Enclosed \$ \_\_\_\_\_

Authorized Signature \_\_\_\_\_

Catalogue No.	Title
75-001-XPE	Perspectives on Labour and Income

Subscription	Price (CDN \$)	Quantity	Total CDN \$
1 year	63.00		
2 years	100.80		
3 years	132.30		

No shipping charges for delivery in Canada. Outside Canada, please add shipping charges as indicated. Canadian clients add either 6% GST and applicable PST or HST (GST Registration No. R121491807). Clients outside Canada pay in Canadian dollars drawn on a Canadian bank or pay in equivalent US dollars, converted at the prevailing daily exchange rate, drawn on a US bank. Federal government departments must

include with all orders their IS Organization Code \_\_\_\_\_ and IS Reference Code \_\_\_\_\_

Your personal information is protected by the Privacy Act. Statistics Canada will use your information only to complete this sales transaction, deliver your product(s), announce product updates and administer your account. From time to time, we may also offer you other Statistics Canada products and services or ask you to participate in our market research.

If you do not wish to be contacted again for promotional purposes ☐ and/or market research ☐, check as appropriate.

Subtotal	
Applicable GST (6%)	
Applicable PST	
Applicable HST (N.S., N.B., N.L.)	
Shipping charges U.S. CDN \$24, other countries CDN \$40	
<b>Grand Total</b>	



Statistics Canada  
Statistique Canada

Canada



# Revisiting wealth inequality

René Morissette and Xuelin Zhang

**W**ealth provides access to economic resources. To mitigate the impact of unexpected expenses or income losses, those with a reserve of wealth can liquidate some of their financial or real assets. More positively, sufficient net worth allows the possibility to reduce work hours, make riskier investments, or try self-employment. On the other hand, lack of wealth makes these options less likely.

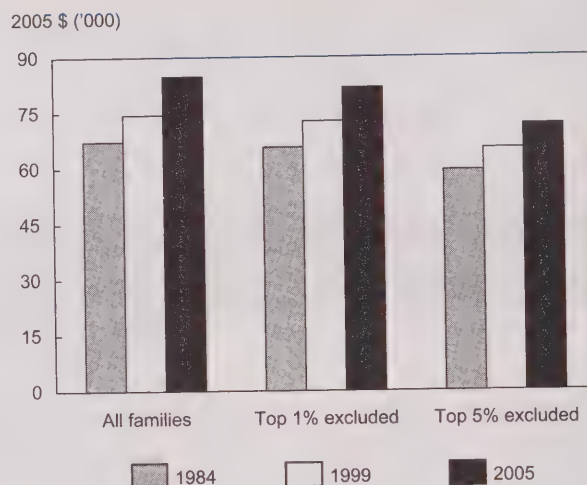
Between 1984 and 1999, wealth inequality rose in Canada (Morissette, Zhang and Drolet 2002, 2006). In 1984, families and unattached individuals (hereafter referred to simply as families) in the top 10% of the wealth distribution held 52% of household wealth, excluding the value of employer-sponsored pension plans. Fifteen years later, they held 56%, and in 2005, 58%.

Using the Assets and Debts Survey for 1984 and the Survey of Financial Security for 1999 and 2005, this article examines wealth distribution over the period from 1984 to 2005. Most of the analysis uses three different samples: all families, all families except those in the top 1%, and all families except those in the top 5%. Since the 1984 survey contained no information about employer-sponsored pensions, wealth, unless otherwise noted, excludes the value of work-related pension plans (see *Data sources and definitions*).

## Average and median wealth

Between 1984 and 1999, real (adjusted for inflation) median wealth grew by roughly 10% (Chart A). It rose a further 10% to 14% between 1999 and 2005, bringing the increase to between 21% and 26% over the

**Chart A** The median wealth (in constant dollars) of families rose by more than 20% between 1984 and 2005



Sources: Statistics Canada, Assets and Debts Survey, 1984; Survey of Financial Security, 1999 and 2005

entire 1984-to-2005 period. In contrast, real average wealth increased between 51% and 70%, reflecting large increases in wealth at the top of the distribution.<sup>2</sup>

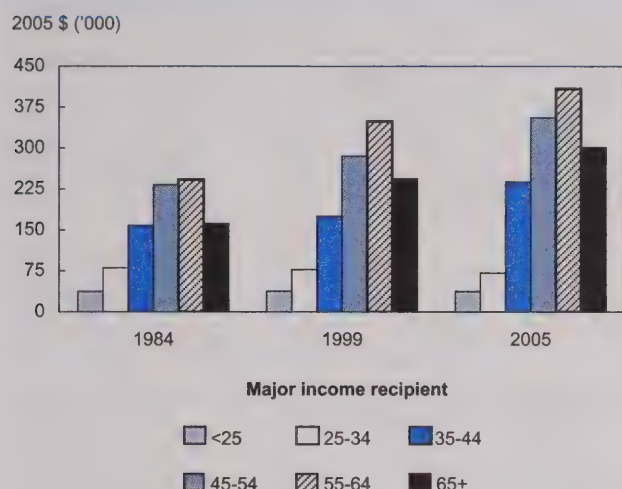
The growth was far from uniform across age groups. Average wealth rose faster among families with a major income recipient 35 and over (Chart B). For instance, it increased by at least 79% in families with a major income recipient 65 and over, but fell by up to 12% when the major income recipient was 25 to 34.

Part of the increase in average wealth resulted from the aging of the population, with more families having had time to accumulate financial and real assets. If the age structure had remained unchanged throughout the 1984-to-2005 period, average wealth would have risen less. Applying the 1984 age structure to the 2005

*The authors are with the Business and Labour Market Analysis Division. René Morissette can be reached at 613-951-3608 or [rene.morissette@statcan.ca](mailto:rene.morissette@statcan.ca); Xuelin Zhang can be reached at 613-951-4295 or [xuelin.zhang@statcan.ca](mailto:xuelin.zhang@statcan.ca).*



**Chart B Average wealth rose more for families with a major income recipient 35 or older**



Sources: Statistics Canada, Assets and Debts Survey, 1984; Survey of Financial Security, 1999 and 2005

wealth distribution indicates that about one-quarter of the growth from 1984 to 2005 was caused by population aging. The remainder reflected growth within age groups.

### Wealth inequality 1984 to 2005

As numerous studies have shown (for example, Davies 1979 and 1993), wealth is highly concentrated. In 1984, families in the top 10% of the wealth distribution held 52% of aggregate household wealth whereas the bottom 50% held only 5% (Table 1).<sup>3</sup> Concentration increased from 1984 to 1999 and again from 1999 to 2005, as the top 10% of families came to own 56% of Canadians' net worth in 1999, and 58% in 2005.<sup>4</sup> Over the 1984-to-2005 period, only families in the top 10% increased their share of total wealth.<sup>5</sup>

Meanwhile, median net worth stagnated or fell in the bottom 40% of the distribution but rose substantially in the top 40%. For instance, median net worth fell by roughly \$7,500 (in 2005 dollars) in the lowest 10% over the 1984-to-2005 period, while increasing by between \$237,000 and \$659,000 (depending on the sample considered) in the highest 10%. Hence, wealth inequality rose as not all segments of the Canadian population enjoyed wealth increases.<sup>6</sup>

### Data sources and definitions

The 1984 **Assets and Debts Survey** (ADS) was a supplement to the May 1984 Survey of Consumer Finances. The 1999 **Survey of Financial Security** (SFS) was conducted from May to July 1999, and the 2005 SFS was conducted from May to July 2005. For all three surveys, the sample was based on the Labour Force Survey frame and represented all families in Canada except residents of the territories, households on Indian reserves, full-time members of the Armed Forces, and residents of institutions.<sup>1</sup>

Some differences between the surveys are worth noting. The ADS collected information on assets (except housing) and debts for each member of the family aged 15 and over and then aggregated to the family level. In contrast, the SFS collected this information directly at the family level. The SFS also used a supplementary 'high-income' sample to improve the quality of wealth estimates.

To make the concept of wealth comparable, the following must be excluded from the SFS: contents of the home, collectibles and valuables, annuities, and registered retirement income funds (RRIFs). Wealth is the difference between the value of a family's total assets and its total debts. Unless otherwise noted, it excludes the value of work-related pension plans as well as entitlements to future Canada/Quebec Pension Plan or Old Age Security benefits. It also excludes any measure of the discounted flow of future earnings by family members.

One particularly difficult issue is the measurement of the upper tail of the wealth distribution. Using a variety of data sources, Davies (1993) estimates that the share of total wealth held by the top 1% of families in 1984 may increase from 17% (using the ADS) to between 22% and 27% after adjustments. Similarly, the share held by the top 5% of families in 1984 may increase from 38% to between 41% and 46%.

A further complication arises because comparisons are made for two points in time and the degree of truncation may have changed. More precisely, assume, for simplicity, that the true wealth distribution remained unchanged between 1984 and 1999. Extending the argument of Davies (1993, 160) to the analysis of changes in the wealth distribution, if no family with wealth over \$10 million consented to an interview in 1984, and none with wealth over \$50 million consented in 1999, the 1984 ADS and 1999 SFS would show an (incorrect) increase in wealth inequality simply because of better interviewing techniques in the later survey. Most of the analysis in this paper therefore uses three different samples: all families, all families except those in the top 1% of the wealth distribution, and all families except those in the top 5%. The terms wealth and net worth are used interchangeably.

In fact, although both median and average wealth grew markedly, the proportion of families with zero or negative net worth showed no improvement. In 2005, 14% of families had more debts than assets, up from 11% in 1984 (Table 2). Also, more families had no financial wealth in 2005 (24%) than in 1984 (18%).<sup>7</sup>



Table 1 Median wealth and share of total wealth

	Median wealth			Share			2005 share with:	
	1984	1999	2005	1984	1999	2005	1984 age structure	1984 family structure
<b>All families</b>		2005 \$				%		
Bottom 10%	-2,100	-6,570	-9,600	-0.5	-0.6	-0.6	-0.8	-0.6
Second	780	120	10	0.1	0.0	0.0	0.0	0.0
Third	7,770	6,820	6,000	0.5	0.4	0.2	0.1	0.3
Fourth	24,630	26,150	25,500	1.7	1.3	1.1	0.7	1.3
Fifth	52,260	57,120	63,250	3.5	2.8	2.5	2.1	2.7
Sixth	83,130	93,850	109,050	5.6	4.7	4.4	3.9	4.4
Seventh	120,690	148,610	173,590	8.2	7.4	6.9	6.6	6.9
Eighth	170,210	221,770	263,000	11.5	11.0	10.5	10.4	10.2
Ninth	256,740	344,890	413,750	17.5	17.4	16.8	17.0	16.2
Top 10%	534,980	723,590	1,194,000	51.8	55.7	58.2	60.0	58.6
<b>Top 1% excluded</b>								
Bottom 10%	-2,120	-6,800	-9,850	-0.6	-0.8	-0.8	-1.0	-0.8
Second	710	120	10	0.1	0.0	0.0	0.0	0.0
Third	7,430	6,390	5,800	0.6	0.4	0.3	0.2	0.4
Fourth	23,830	25,340	24,870	1.9	1.6	1.3	0.9	1.6
Fifth	50,850	55,220	61,500	4.1	3.4	3.1	2.5	3.4
Sixth	81,630	91,360	105,660	6.6	5.7	5.4	4.8	5.7
Seventh	117,890	144,470	168,000	9.5	9.0	8.6	8.1	8.7
Eighth	165,080	214,310	250,970	13.4	13.3	12.9	12.7	12.9
Ninth	246,300	326,650	392,720	20.1	20.7	20.5	20.6	20.2
Top 10%	470,000	644,390	939,340	44.2	46.6	48.6	51.3	47.8
<b>Top 5% excluded</b>								
Bottom 10%	-2,290	-7,170	-10,100	-0.7	-1.0	-1.1	-1.4	-1.1
Second	530	60	0	0.1	0.0	0.0	-0.1	0.0
Third	6,420	4,030	4,400	0.7	0.5	0.3	0.2	0.4
Fourth	20,580	21,960	21,000	2.2	1.8	1.5	1.0	1.9
Fifth	45,380	49,070	55,000	4.7	4.0	3.8	3.0	4.1
Sixth	75,210	83,180	95,360	7.7	6.7	6.5	5.7	6.9
Seventh	107,170	129,720	151,000	11.1	10.4	10.3	9.7	10.4
Eighth	149,800	190,780	224,970	15.5	15.4	15.3	15.2	15.3
Ninth	211,930	279,320	333,050	22.0	22.8	23.3	23.7	22.7
Top 10%	341,090	472,910	578,180	36.8	39.5	40.2	43.1	39.4

Note: Excluding the value of registered pension plans.

Sources: Statistics Canada, Assets and Debts Survey, 1984; Survey of Financial Security, 1999 and 2005

While wealth inequality rose between 1984 and 1999 (Morissette, Zhang and Drolet 2002, 2006), summary measures of inequality confirm that it kept rising between 1999 and 2005.<sup>8</sup> The Gini coefficient (which equals 0.0 if all families have the same amount of wealth and 1.0 if one family holds all household wealth) rose from 0.691 in 1984 to 0.727 in 1999 and then to 0.746 in 2005.<sup>9</sup>

Wealth inequality did not rise uniformly. It increased much more among non-elderly couples with children and lone-parent families than among unattached individuals and non-elderly couples with no children (Table 3).

The evolution of the Gini coefficient since 1970 provides a long-term perspective on wealth inequality. The Assets and Debts Survey looked at wealth distribution in 1970, 1977 and 1984. The 1984 survey was reweighted to make it consistent with the 1999 and 2005 Survey of Financial Security. Thus, comparable Gini coefficients are available over the following two sub-periods: 1970 to 1984 and 1984 to 2005.<sup>10</sup>

Wealth inequality, as measured by the Gini coefficient, displayed a U-shape between 1970 and 2005 (Chart C). It fell sharply between 1970 and 1977, remained fairly constant between 1977 and 1984, but rose substantially in subsequent years. As a result, it was no



**Table 2 Families with no wealth or no financial wealth**

	1984	1999	2005
	%		
<b>All families</b>			
Net worth ≤0	10.8	12.3	14.1
Financial wealth ≤0	17.7	19.7	24.0
<b>Top 1% excluded</b>			
Net worth ≤0	10.9	13.4	14.2
Financial wealth ≤0	17.8	19.9	24.1
<b>Top 5% excluded</b>			
Net worth ≤0	11.3	14.0	14.8
Financial wealth ≤0	18.2	20.7	25.1

Sources: Statistics Canada, Assets and Debts Survey, 1984; Survey of Financial Security, 1999 and 2005

lower in 2005 than in 1970. Hence, Canada's wealth dispersion has been trending upwards since the mid-1980s. Similar patterns are observed when plotting the share of wealth held by the top 10% of families.

While wealth inequality first fell and then rose over the 1970-to-2005 period, median wealth trended upwards (Chart D). It rose sharply between 1970 and 1977, stagnated between 1977 and 1984, and then rose again after 1984. It amounted to roughly \$85,000 in 2005, more than twice the 1970 level (roughly \$40,000).

While population aging tended to increase average wealth between 1984 and 2005, it also affected the wealth distribution. In the absence of population aging, the share of total wealth held by the top 10% of families would have risen from 52% in 1984 to 60% in 2005 (Table 1). Since the actual figure in 2005 was 58%, it appears that population aging reduced the concentration of wealth at the top of the distribution.<sup>11</sup>

Some evidence suggests that changes in family structure had the opposite effect. If the top 1% or the top 5% of families are excluded, the share of aggregate

wealth held by the top 10% would have risen by one percentage point less between 1984 and 2005 if the proportion of unattached individuals and lone-parent families had remained unchanged. However, this no longer holds when all families are considered.

### Wealth by population subgroup

Although both median and average wealth rose between 1984 and 2005, not all population subgroups enjoyed increases. Young families (major income recipient aged 25 to 34) saw their median wealth fall by 50% or more (Table 4).<sup>12</sup> The situation was fairly similar in 1984 and 2005 for families with a major income recipient aged 35 to 54 without a university degree. However, this age group saw a solid 39% rise in median wealth when the major income recipient was a university graduate.

Other groups also benefited. Elderly unattached individuals saw their median wealth double, from roughly \$48,000 in 1984 to \$100,000 in 2005. Couples with children under 18 and those with no children also saw theirs increase—34% and 55% respectively. Growth among couples with children was far from uniform, however. For young couples, median wealth fell sharply between 1984 and 1999, rebounding between

**Table 3 Gini coefficient by family type**

	1984	1999	2005	1984-2005
				% change
<b>Unattached individual</b>				
Elderly	0.647	0.655	0.659	1.9
Non-elderly	0.853	0.868	0.888	4.1
<b>Non-elderly couple</b>				
No children or other relatives	0.666	0.695	0.689	3.5
Children under 18 <sup>1</sup>	0.647	0.707	0.738	14.1
Children 18 and over or other relatives	0.540	0.614	0.619	14.6
<b>Elderly couple</b> (no children or other relatives <sup>2</sup> )	0.540	0.541	0.576	6.7
<b>Lone-parent family</b>	0.807	0.897	0.886	9.8
<b>Other</b>	0.667	0.650	0.646	-3.1

1 At least one child of the major income recipient is under 18. Other relatives may also be in the family.

2 No children under 18.

Sources: Statistics Canada, Assets and Debts Survey, 1984; Survey of Financial Security, 1999 and 2005



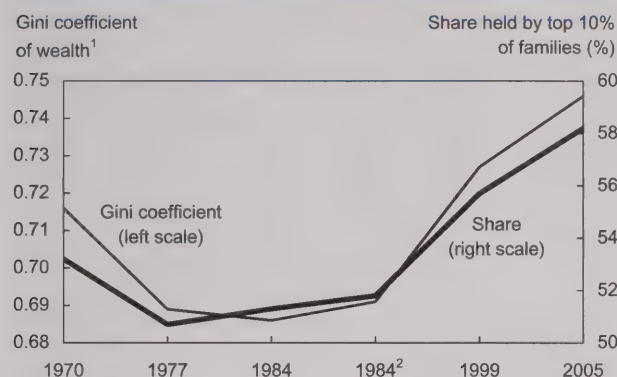
**Table 4 Median and average wealth by characteristics of major income recipient**

	Median wealth			Average wealth		
	1984	1999	2005	1984	1999	2005
			2005 \$			
<b>Overall</b>	<b>67,300</b>	<b>74,400</b>	<b>84,800</b>	<b>148,500</b>	<b>202,900</b>	<b>251,700</b>
<b>Education level</b>						
Not a university graduate	60,800	62,300	68,500	137,500	167,400	214,700
University graduate	114,800	135,900	144,900	218,100	333,500	364,800
<b>Age</b>						
Under 25	3,500	200	F	37,200	37,900	F
25 to 34	27,000	17,400	13,400	80,500	77,500	71,000
35 to 44	84,700	69,100	84,200	158,500	175,000	238,300
45 to 54	142,800	132,700	146,000	233,200	285,400	355,900
55 to 64	148,700	177,500	203,500	242,300	348,900	409,000
65 and over	93,100	145,200	157,000	162,100	244,100	301,700
<b>Age/education</b>						
25 to 34						
Not a university graduate	24,400	12,800	10,500	72,100	57,400	57,800
University graduate	47,500	35,600	F	117,600	129,100	F
35 to 54						
Not a university graduate	92,700	75,800	87,500	176,500	179,800	245,100
University graduate	150,100	166,700	208,500	252,000	359,800	432,100
<b>Immigration status</b>						
Canadian-born	62,100	69,700	77,000	141,500	194,300	238,800
Immigrant	95,700	107,900	122,700	177,700	238,600	306,200
In Canada 20 years or more	138,200	197,300	222,100	224,400	329,000	385,300
In Canada 10 to 19 years	78,400	51,300	F	131,700	162,200	F
In Canada less than 10 years	20,300	15,100	F	103,800	87,200	F
<b>Family type</b>						
Unattached individual						
Elderly	47,700	80,600	100,000	90,600	159,100	199,100
Non-elderly	6,600	6,900	5,000	54,400	73,600	74,700
Couple, no children	83,600	117,100	129,900	174,200	281,300	300,700
Couple, children under 18	89,700	89,600	120,200	172,000	225,700	350,600
Couple, children 18 and over	179,500	192,900	259,500	289,700	360,000	476,500
Elderly couple, no children	139,500	204,500	220,000	228,700	323,100	405,900
Lone-parent family	2,200	4,200	F	45,400	73,500	F
Other	85,500	129,800	130,500	167,100	242,100	241,900

Sources: Statistics Canada, Assets and Debts Survey, 1984; Survey of Financial Security, 1999 and 2005



**Chart C The distribution of wealth has again become more unequal**

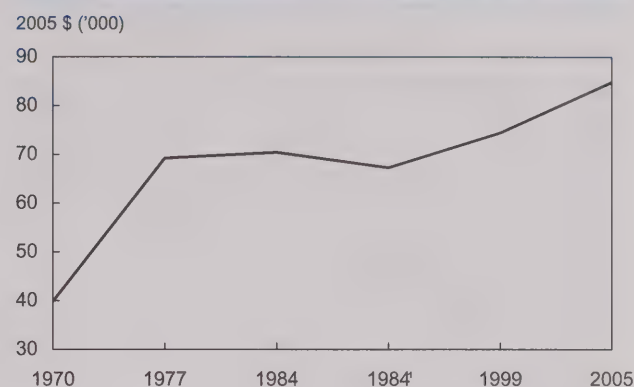


1 Excluding the value of registered pension plans (RPPs).

2 1984 data re-weighted for consistency with the Survey of Financial Security.

Sources: Statistics Canada, Assets and Debts Survey, 1984; Survey of Financial Security, 1999 and 2005

**Chart D After stagnating between 1977 and 1984, median wealth increased between 1984 and 2005**



1 1984 data re-weighted for consistency with the Survey of Financial Security.

Sources: Statistics Canada, Assets and Debts Survey, 1984; Survey of Financial Security, 1999 and 2005

1999 and 2005, although not to its 1984 level (Table 5).<sup>13</sup> In contrast, for those aged 45 to 54, median wealth rose steadily, climbing 45% between 1984 and 2005.

Lone-parent families and non-elderly unattached individuals had low median and average wealth, reflecting at least partially the absence of a second earner. For these two groups, median wealth was no higher than \$7,000 in 1999. This reflects the lack of assets these families have at their disposal to lessen the impact of unexpected expenses or earnings disruptions.

Average wealth rose more than median wealth in virtually all population subgroups (Table 4), suggesting that the increase in wealth inequality was widespread. For instance, the average wealth of immigrants arriving 20 or more years ago rose by more than \$150,000 while their median wealth increased by roughly \$85,000.<sup>14</sup>

### Wealth components

Average wealth did not improve over the 1984-to-2005 period for families in the bottom fifth of the distribution. In contrast, it rose about \$19,000 in the middle group and more than \$400,000 in the top fifth (Table 6).<sup>15</sup>

**Table 5 Wealth of non-elderly couples with children under 18**

	1984	1999	2005
<b>Age of major income recipient</b>			
<b>25 to 54</b>			
Average	172,400	224,600	350,700
Median	90,600	90,400	120,300
Net worth ≤ 0 (%)	6.2	8.5	8.0
<b>25 to 34</b>			
Average	109,300	88,000	100,700
Median	50,700	35,500	45,600
Net worth ≤ 0 (%)	9.5	16.0	15.4
<b>35 to 44</b>			
Average	188,200	228,000	348,500
Median	105,000	103,100	126,800
Net worth ≤ 0 (%)	4.9	6.8	5.9
<b>45 to 54</b>			
Average	262,400	376,500	597,700
Median	166,300	186,100	241,900
Net worth ≤ 0 (%)	2.8	3.4	4.8

Sources: Statistics Canada, Assets and Debts Survey, 1984; Survey of Financial Security, 1999 and 2005



Selected characteristics of persons in low-income families	Low income			Low income and no financial wealth <sup>1</sup>			Low income and financial wealth < income gap <sup>2</sup>		
	1983	1998	2004	1984	1999	2005	1984	1999	2005
<b>All families</b>	13.8	13.6	12.5	5.0	5.3	4.6	9.8	9.5	9.1
<b>Age of major income recipient (MIR)</b>					%				
Less than 25	28.8	47.5	38.2	13.3	22.7	17.6	24.6	38.9	32.8
25 to 34	14.6	18.0	17.7	6.3	9.4	7.2	11.4	14.6	13.6
35 to 44	10.5	12.9	12.3	3.8	4.8	4.2	8.0	8.8	8.8
45 to 54	8.9	8.3	8.1	3.1	2.6	3.5	6.5	5.4	5.8
55 to 64	12.2	12.1	9.4	3.1	3.2	1.6	6.5	6.6	5.7
65 and over	20.3	8.2	6.0	4.0	1.4	1.4	9.1	3.6	2.9
<b>Education level of MIR</b>									
Not a university graduate	15.1	15.1	14.3	5.4	6.0	5.8	10.7	10.7	10.9
University graduate	6.1	8.5	7.4	2.6	3.0	1.3	4.1	5.6	4.0
<b>Age/education of MIR</b>									
25 to 34									
Not a university graduate	16.0	19.9	22.1	6.6	10.8	9.9	12.5	16.5	17.8
University graduate	7.7	11.9	8.5	4.6	4.9	1.6	6.1	8.6	5.0
35 to 54									
Not a university graduate	11.0	12.3	11.8	4.0	4.4	4.9	8.4	8.2	9.0
University graduate	4.3	7.2	7.0	1.4	2.3	1.4	2.4	4.8	3.6
<b>Family type</b>									
Unattached individual									
Elderly	47.9	21.3	16.5	8.3	3.3	2.4	19.5	9.4	7.2
Non elderly	34.1	37.6	35.1	14.7	16.8	15.0	26.9	30.0	30.5
Couple, no children	6.6	6.8	5.8	1.7	1.9	1.7	3.6	3.7	3.5
Couple, children under 18	9.8	10.3	9.3	3.8	3.5	1.8	7.1	6.7	5.2
Couple, children 18 and over	3.0	3.2	2.9	0.6	1.0	0.9	1.3	1.2	1.4
Elderly couple, no children	5.2	1.5	0.5	0.5	0.4	0.3	1.6	0.9	0.3
Lone-parent	49.9	44.5	46.5	20.7	24.0	27.5	42.7	37.5	41.7
Female	53.6	49.3	50.0	21.9	26.7	29.6	45.7	42.1	44.6
Other	14.9	9.8	6.9	5.8	3.5	3.1	12.1	5.7	5.3
<b>Immigration status of MIR</b>									
Canadian-born	13.6	12.2	10.7	5.2	5.1	4.3	9.9	8.6	8.2
Immigrant	14.9	17.9	18.8	4.2	6.1	5.8	9.6	12.3	12.1
Less than 10 years ago	23.1	35.6	34.5	7.3	12.8	9.7	15.7	25.6	21.2
10 years ago or more	12.9	11.3	12.6	3.4	3.7	4.2	8.2	7.4	8.6

1 Zero or negative financial wealth. Financial wealth is defined as net worth minus net equity in housing and net business equity.

2 The income gap is the difference between a family's low-income cutoff and its after-tax income.

Sources: Statistics Canada, Assets and Debts Survey, 1984; Survey of Financial Security, 1999 and 2005

Data on low income are often used to examine the extent to which families live in straitened circumstances. However, while after-tax income is a good indicator of a family's ability to sustain a given standard of living, wealth is also important—financial assets can be converted into cash and used for consumption.

Families with both low income and little or no financial wealth are more vulnerable than others since they have fewer resources to absorb negative shocks (Morissette 2002). Modest wealth is defined as insufficient to cover a family's low-income gap—that is, they would remain in low income even if they liquidated all their financial assets. These families would face short-term financial difficulties if unexpected and unfavourable events occurred.

The proportion of persons living in families with low income and no financial wealth remained virtually unchanged at 5% between 1984 and 2005. Similarly, those in families with low

income and modest financial wealth changed little—10% in 1984 and 9% in 2005.

Regardless of the measure used, female lone-parent families are by far the most financially vulnerable. In all years, more than 40% of persons in these families were in low income and would have stayed in that state even after liquidating their financial assets. Non-elderly unattached individuals are also vulnerable; 31% were in low income and had little financial wealth in 2005.

In all years, financial vulnerability was substantially lower for older age groups, no doubt reflecting an increase in earnings and wealth with age. Between 1984 and 2005, the financial vulnerability of families with a major income recipient under 25 rose. It also rose for those with a major income recipient aged 25 to 34 with no university degree. However, it fell among those with a major income recipient aged 65 and over. The improvement among elderly families reflects growing income from private and public pensions.



**Table 6 Average wealth components**

	1984	1999	2005	1984-2005
<b>Bottom fifth</b>		2005 \$		Change
<b>Assets</b>				
Non-RRSP deposits	750	630	640	-110
Non-RRSP investments	130	140	160	30
RRSPs/LIRAs	90	730	810	720
Other financial	120	150	10	-110
Principal residence	1,850	4,650	6,380	4,520
Other real estate	340	800	740	400
Vehicles	1,970	2,010	2,550	580
Business equity	580	-370	770	190
<b>Debts</b>				
Mortgage on principal residence	1,460	4,220	5,700	4,240
Other debt	7,270	10,440	14,110	6,850
<b>Net worth</b>	-2,890	-5,920	-7,760	-4,860
<b>Middle fifth</b>				
<b>Assets</b>				
Non-RRSP deposits	9,940	7,690	8,780	-1,160
Non-RRSP investments	2,680	2,550	2,510	-170
RRSPs/LIRAs	2,510	13,020	12,070	9,560
Other financial	1,210	1,440	20	-1,190
Principal residence	67,040	92,630	115,220	48,180
Other real estate	8,330	7,490	8,660	330
Vehicles	9,160	10,960	12,210	3,040
Business equity	2,700	1,970	2,380	-330
<b>Debts</b>				
Mortgage on principal residence	26,870	49,190	57,380	30,500
Other debt	8,680	12,460	17,420	8,740
<b>Net worth</b>	68,020	76,100	87,050	19,030
<b>Top fifth</b>				
<b>Assets</b>				
Non-RRSP deposits	50,800	48,370	59,090	8,290
Non-RRSP investments	34,610	98,160	96,790	62,180
RRSPs/LIRAs	22,980	115,030	126,980	104,000
Other financial	17,170	19,230	1,840	-15,340
Principal residence	175,450	249,430	353,920	178,460
Other real estate	60,740	83,520	153,160	92,420
Vehicles	18,390	24,480	26,930	8,540
Business equity	171,720	157,800	207,020	35,300
<b>Debts</b>				
Mortgage on principal residence	15,760	28,570	39,550	23,790
Other debt	21,470	26,430	41,600	20,140
<b>Net worth</b>	514,650	741,010	944,590	429,940

Sources: Statistics Canada, Assets and Debts Survey, 1984; Survey of Financial Security, 1999 and 2005

From an accounting view, two factors were mainly responsible for the widening gap between families in the bottom and top fifths of the wealth distribution: home equity and holdings in RRSPs and locked-in retirement accounts (LIRAs). The net value of the principal residence stagnated among families in the bottom fifth, but rose about \$155,000 among those in the top fifth.<sup>16</sup> Similarly, RRSP and LIRA holdings changed very

little in the former group while increasing roughly \$100,000 in the latter. Roughly 60% of the \$435,000 increase in dispersion between the two groups over the 1984-to-2005 period is explained by the increase in home equity and RRSPs or LIRAs among the top fifth of the distribution.<sup>17</sup> Adding growth in the value of stocks, bonds and mutual funds (roughly \$62,000 for the top group) accounts for 73% of the increase. If growth in the value of real estate other than the principal residence (\$92,000) is also added, almost the entire increase (94%) is accounted for.<sup>18</sup>

Several other points are worth noting. After almost tripling between 1984 and 1999, the stock, bond and mutual fund holdings of families in the top fifth stagnated between 1999 and 2005, likely a reflection of the downturn in the stock market after 2001. However, at the same time, these families substantially increased the value of real estate assets other than their principal residence. In addition, the strong growth in RRSPs among this group is consistent with the sharp increase in RRSP contributions made by high-income families over the 1986-to-2003 period (Morissette and Ostrovsky 2006).

### The role of inheritances

Part of the wealth gap may be due to inheritances, and questions asked in the 2005 Survey of Financial Security shed light on this issue. According to the survey, some 10% of families in the bottom fifth of the wealth distribution had received inheritances, compared with 36% in the top fifth. On average, the market value of inheritances for recipients in the former

**Table 7 Wealth gap between the bottom 20% and the top 20%, 2005**

	Average wealth gap	Fraction of gap explained
	\$	%
<b>No controls</b>	958,400	...
<b>A. Controlling for inheritances</b>		
1 - Received in the past 10 years	929,700	3.0
2 - Received in the past	916,900	4.3
3 - Value, annual growth = 1%	913,700	4.7
4 - Value, annual growth = 3%	916,000	4.4
5 - Value, annual growth = 5%	926,600	3.3
<b>B. Controlling for after-tax income</b>	839,800	12.4
<b>C. Multiple controls<sup>1</sup></b>	896,100	6.5
C + A1	867,700	9.5
C + A2	857,700	10.5
C + A3	855,200	10.8
C + A4	857,200	10.6
C + A5	866,200	9.6
C + A1 + B	772,900	19.4
C + A2 + B	762,600	20.4
C + A3 + B	760,300	20.7
C + A4 + B	762,100	20.5
C + A5 + B	771,000	19.6

Note: Based on 5,190 observations; families for whom the value of inheritances is unknown are excluded.

1 Including provincial indicators, a quadratic term for the age of the major income recipient, four indicators for the education level of the major income recipient, six indicators of family type and an indicator of work limitation. The dependent variable is the net worth of families.

Source: Statistics Canada, Survey of Financial Security

group was one-tenth (\$13,200) that of the latter group (\$136,600). Together, these two findings suggest that inheritances may explain part of the wealth gap.

Five measures of inheritance were considered (Table 7). Two refer to the market value of inheritances received anytime in the past or in the past 10 years. The other three measures assume that financial or real assets received in the past have not been consumed by households and have appreciated since the year of receipt at annual rates of 1%, 3% or 5% (after inflation).<sup>19</sup>

Whichever measure is considered, controlling for the value of inheritances received reduces the average wealth gap between the bottom and top fifths by between 3% and 5%. In contrast, after-tax income has a much bigger impact, explaining 12% of the gap.

Since conclusions about the influence of specific explanatory variables depend on the order in which these variables are entered, alternative specifications are considered. Rather than simply controlling for inheritances alone, they can be added to a specification that already includes a large set of controls: family type, province of residence, age and education of the major income recipient, and an indicator of work limitation. When this is done, the fraction of the wealth gap explained increases from about 7% to over 10%. Once again, this suggests that inheritances, however measured, account for a very small portion (around 3% to 4%) of the wealth gap between the bottom and top fifths.

Furthermore, adding after-tax income to inheritances and the large set of controls defined above increases the portion of the wealth gap than can be explained from around 10% to about 20%. This confirms that family income after tax does a better job than inheritances in explaining the wealth gap.

### Broader concepts of wealth, 1999 to 2005

Because the Assets and Debts Survey contained no information about employer-sponsored retirement plans, the wealth concept used so far has not taken into account the value of work-related pension plans. Including pensions in a broader concept of net worth suggests that median wealth grew between 19% and 23% over the 1999-to-2005 period.<sup>20</sup> In contrast, average wealth, broadly defined, increased by between 27% and 30%, depending on the samples considered.

As with the narrower wealth concept, almost no evidence is found that wealth inequality based on a concept that includes the value of registered pension plans fell between 1999 and 2005. In general, the share of total wealth held by the top tenth of the distribution rose slightly, if anything, between 1999 and 2005 (Table 8).<sup>21</sup> Furthermore, in all three samples, neither the Gini coefficient nor the coefficient of variation decreased over that period. Only the exponential measure showed a very small decrease (1% to 2%) when families in the top 5% of the wealth distribution were excluded.<sup>22</sup>

### Summary

Median wealth more than doubled between 1970 and 2005, having grown by about 20% to 25% since 1984. Thus, many Canadian families today are richer than their counterparts 20 or 35 years ago.



**Table 8 Shares of total wealth**

	All families		Top 1% excluded		Top 5% excluded	
	1999	2005	1999	2005	1999	2005
<b>Using RPP termination value</b>						
			%			
Bottom 10%	-0.3	-0.3	-0.3	-0.3	-0.4	-0.4
Second	0.2	0.1	0.2	0.2	0.2	0.2
Third	0.7	0.6	0.8	0.7	0.9	0.8
Fourth	1.9	1.7	2.2	1.9	2.4	2.1
Fifth	3.4	3.2	3.8	3.7	4.3	4.1
Sixth	5.5	5.2	6.2	6.0	6.9	6.7
Seventh	8.1	8.1	9.2	9.3	10.2	10.2
Eighth	12.0	12.2	13.7	13.9	14.8	15.3
Ninth	18.9	18.3	21.3	20.9	22.3	22.2
Top 10%	49.6	50.9	42.9	43.9	38.5	38.9
<b>Using RPP going concern value</b>						
Bottom 10%	-0.3	-0.3	-0.3	-0.3	-0.4	-0.4
Second	0.2	0.1	0.2	0.2	0.2	0.2
Third	0.8	0.6	0.9	0.7	0.9	0.8
Fourth	1.9	1.7	2.2	1.9	2.4	2.1
Fifth	3.5	3.2	4.0	3.7	4.4	4.1
Sixth	5.6	5.3	6.4	6.1	7.1	6.8
Seventh	8.3	8.1	9.4	9.3	10.3	10.3
Eighth	12.2	12.2	13.8	14.0	14.8	15.3
Ninth	19.1	18.4	21.4	20.8	22.3	22.2
Top 10%	48.7	50.6	42.1	43.6	40.0	38.6

Note: Including the value of registered pension plans (RPPs).

Source: Statistics Canada, Survey of Financial Security, 1999 and 2005

Nevertheless, major changes in the wealth structure have taken place over the last two decades. While the median wealth of young families fell by half between 1984 and 2005, it rose by almost 40% for those in which the major income recipient was a university graduate aged 35 to 54. Median wealth of elderly unattached individuals doubled but remained negligible among lone-parent families.

During this period, the distribution of wealth, excluding the value of employer-sponsored pension plans, has become more unequal—and would have become even more unequal in the absence of population aging. The gap between families in the bottom and top 20% of the wealth distribution rose mainly

because the top 20% experienced a substantial increase in home equity and also allocated more of their financial assets to RRSP and LIRA holdings.

As measured by the Gini coefficient, wealth inequality fell sharply between 1970 and 1977, remained fairly constant between 1977 and 1984, but rose substantially in subsequent years. As a result, it was no lower in 2005 than in 1970. In virtually all population subgroups, average wealth rose more than median wealth, suggesting that the increase in wealth inequality was widespread. The growing wealth dispersion since the mid-1980s suggests that Canadian families are becoming increasingly unequal in their capacity to mitigate negative

income shocks in bad times or to initiate forward-looking strategies in good times.

### Perspectives

#### ■ Notes

1 Includes penal institutions, mental hospitals, sanatoriums, orphanages and seniors' residences.

2 When all families are considered, real average wealth rose 70% during this period. When the top 1% (5%) of families are excluded, it increased by 59% (51%). For median wealth, the corresponding estimates are 26%, 25% and 21%.

3 To analyze trends in wealth inequality, the Gini coefficient and two other measures were used: the coefficient of variation and the exponential measure. The Gini coefficient is sensitive to changes in the middle of the wealth distribution, while the coefficient of variation is sensitive to changes at the top, and the exponential measure to changes at the bottom.

4 While the increase in the share of wealth held by the top 10% over the 1999-to-2005 period is not statistically significant at the 5% level (two-tailed test), the increase over the 1984-to-2005 period is significant at the 1% level. The corresponding increases observed over the 1984-to-2005 period for the other two samples are also significant at the 1% level.

5 When the top 1% or 5% of families are excluded, only the top 20% of the remainder saw their share of total wealth increase during that period.

6 When all families are considered, median wealth of the wealthiest 20% of families amounted to about \$551,000 in 2005, compared with \$465,000 in 1999 and \$336,000 in 1984. In contrast, median wealth in the bottom 20% of the distribution has stagnated over the past two decades; it was essentially zero in 1984 and negative (about -\$1,000) in both 1999 and 2005.

7 Financial wealth is defined as net worth minus net equity in housing and own business.

8 Whether all families are considered or the top 1% are excluded, the increase in the Gini coefficient between 1999 and 2005 is statistically significant at the 10% level. When the top 1% of families are excluded, the increase in the Gini coefficient is significant at the 1% level. In all three samples, the increase in the Gini coefficient between 1984 and 2005 is statistically significant at the 1% level.

9 As is well known, rigorous statements about whether wealth inequality rose from 1999 to 2005 require verifying that the 2005 Lorenz curve lies below the 1999 curve at all percentiles of the wealth distribution. For all three samples, this condition is satisfied when the bottom 0.5% of families are excluded. With this exclusion, wealth inequality unambiguously rose from 1999 to 2005 (and from 1984 to 2005). The growth in wealth inequality over the 1999-to-2005 period followed an increase in inequality in after-tax family income that took place during the 1990s (Frenette, Green and Picot 2006), suggesting that growing income dispersion contributed to the increase in wealth concentration.

10 The Gini coefficients, the estimates of median wealth, and the estimates of the share of wealth held by the top 10% of families for the 1970-to-1984 period (Charts C and D) are drawn from Oja (1987, 28).

11 Population aging leads to a decline in the relative importance of young families, who have lower-than-average wealth, and an increase in the relative importance of older families, who tend to have higher-than-average wealth. Re-weighting the 2005 data using six age groups (under 25, 25 to 34, 35 to 44, 45 to 54, 55 to 64, and 65 and over) produces a Gini coefficient of 0.767. The actual Gini coefficient in 2005 was 0.746, suggesting that population aging tended to reduce wealth inequality between 1984 and 2005. Whether one uses the Gini coefficient, the exponential measure, or the coefficient of variation, this conclusion generally holds in all three samples. The only exception is observed with the coefficient of variation when all families are considered. Here the numbers suggest that population aging accounted for a very small portion (4%) of the increase over the 1984-to-2005 period.

12 The drop occurred mainly because cumulative earnings of young men—the sum they receive over several years—fell substantially between the 1970s and the 1990s. Over the 1994-to-2004 period, their cumulative earnings averaged roughly \$267,000, much less than the \$330,000 for the 1973-to-1983 period. In contrast, cumulative earnings of young women rose more than \$10,000, from about \$166,000 to \$177,000. The cumulative earnings of young men and women taken together fell from \$248,000 to \$222,000. Student loan debt played only a minor role. One reason is

that student debt is carried mainly by postsecondary graduates, who represent only a fraction of young individuals. In fact, the average owed on student loans rose by a modest \$3,300 between 1984 and 2005.

13 In 2005, 15.4% of these couples had zero (or negative) net worth, compared with only 9.5% in 1984.

14 For a detailed analysis of the wealth of immigrant families in 1999, see Zhang (2003).

15 Average wealth rose by roughly \$176,000 among families between the 75th and 95th percentiles.

16 In both 1999 and 2005, the vast majority of families in the top fifth (at least 95%) owned a house. Among homeowners, the median value of the principal residence rose a solid \$75,000 between 1999 and 2005, reflecting a sharp increase in housing prices. In contrast, home equity changed very little among families in the bottom 20%. This is not surprising since very few of these families—at most 6%—owned a house during the 1999-to-2005 period.

17 When families in the top 5% of the wealth distribution are excluded, the average wealth gap between the bottom 20% and those between the 75th and 95th percentiles rises by about \$180,000. Home equity, and RRSPs and LIRAs grow by roughly \$111,000 and \$63,000 respectively among the latter group. Thus, growth differences in these two assets explain about 97% of the widening gap.

18 Ideally, one would like to consider the increase in net wealth on real estate other than the principal residence. This requires data on mortgages held on secondary residences, which are not available in the 1984 Assets and Debts Survey.

19 The 92 families reporting inheritances but not their market value were excluded. The average wealth gap in this sub-sample amounts to \$958,400, very close to the \$952,350 shown in Table 6.

20 Defined-benefit pension plans are valued in two ways, one that generates a termination value and the other a going-concern value. Both methods assume that, for current plan members, plan membership is considered only up to the time of the survey.

21 The only exception is found when using the going-concern value of defined-benefit pension plans and excluding the top 5% of families.

22 In all three samples, median wealth of the top 20% rose at least 26%; for the bottom 20%, it fell 13% or more (using the termination value of defined-benefit pensions).



## ■ References

- Davies, J.B. 1979. "On the size distribution of wealth in Canada." *Review of Income and Wealth*. Vol. 25, no. 3. p. 237–259.
- . 1993. "The distribution of wealth in Canada." In *Research on Economic Inequality*. Vol. 4. Edward N. Wolff (ed.). Greenwich, Conn. JAI Press. p. 159–180.
- Frenette, Marc, David A. Green and Garnet Picot. 2006. "Rising income inequality in the 1990s: An exploration of three data sources." Chapter 3. In *Dimensions of Inequality in Canada*. David A. Green and Jonathan R. Kesselman (eds.). Vancouver. UBC Press.
- Morissette, René. 2002. "Families on the financial edge." *Perspectives on Labour and Income*. Vol. 14, no. 3. Autumn. Statistics Canada Catalogue no. 75-001-XPE. p. 9–20.
- Morissette, René and Yuri Ostrovsky. 2006. *Pension Coverage and Retirement Savings of Canadian Families, 1986 to 2003*. Statistics Canada Catalogue no. 11F0019MIE. Ottawa. Analytical Studies Branch Research Paper Series, no. 286. 48 p.  
<http://www.statcan.ca/english/research/11F0019MIE/11F0019MIE2006286.pdf> (accessed November 28, 2006).
- Morissette, René, Xuelin Zhang and Marie Drolet. 2002. "Wealth inequality." *Perspectives on Labour and Income*. Vol. 14, no. 1. Spring. Statistics Canada Catalogue no. 75-001-XPE. p. 15–22.
- . 2006. "The evolution of wealth inequality in Canada, 1984–1999." Chapter 5. In *International Perspectives on Household Wealth*. Edward N. Wolff (ed.). Cheltenham, U.K. Edward Elgar Publishing.
- Oja, G. 1987. *Changes in the Distribution of Wealth in Canada 1970–1984*. Statistics Canada Catalogue no. 13-588. Ottawa. Income Analytic Report, no. 1. 39 p.
- Zhang, Xuelin. 2003. *The Wealth Position of Immigrant Families in Canada*. Statistics Canada Catalogue no. 11F0019MIE. Ottawa. Analytical Studies Branch Research Paper Series, no. 197. 44 p.  
<http://www.statcan.ca/english/research/11F0019MIE/11F0019MIE2003197.pdf> (accessed November 28, 2006).

### *Are you moving?*

Please forward your name, old address, new address, telephone number and client reference number to: **Statistics Canada, Finance Division, R.H. Coats Bldg., 6th floor, 100 Tunney's Pasture Driveway, Ottawa, Ontario K1A 0T6**; or call 1 800 267-6677 (Canada and United States), fax 1 877 287-4369 (Canada and United States) or e-mail [infostats@statcan.ca](mailto:infostats@statcan.ca).

Please allow four weeks notice to ensure uninterrupted delivery.

# Work hours instability

Andrew Heisz and Sébastien LaRochelle-Côté

**T**he labour market is perpetually in flux, with jobs constantly being created and destroyed in all industries. At the same time, workers are quitting, being laid off, moonlighting, and shifting between full-time work, part-time work, and no work. Nevertheless, many workers still manage to obtain secure, stable employment. These people are able to plan for the future. They can buy a house with some certainty of having enough earnings to meet the mortgage payments. They can feel confident enough to marry or start a family. They can rest soundly, knowing they are not likely to face a significant shortage of work in the near future. But what about those in less secure circumstances? How many workers are unable to secure stable employment? What are their work patterns? And what could be the consequences?

Static measures of the labour market such as the unemployment rate, the part-time employment rate or average job tenure hide as much as they reveal. For instance, knowing that 14% of workers worked 50 hours or more during a typical week in 2005 sheds no light on how many of those workers were over-worked month after month. This paper examines the annual work hours of employees over a five-year period. This provides a parsimonious measure, combining job destruction, job change, change in weekly work hours, and multiple job holding into one indicator of overall worker well-being.

## Annual work hours instability

The Survey of Labour and Income Dynamics (see *Data source and definitions*) provides annual work hours over successive years, thereby allowing an assessment of work hours instability. Examining work hours from

a cross-sectional perspective first illustrates the advantage of looking at hours over several years (Table). More than half of employees worked a standard number of hours (1,750 to 2,199) in a year—52.5% in 1997 and 57.2% in 2001. Short hours were the second most common (28.1% and 24.7%) while long hours were relatively rare (12.4% and 12.2%). (Non-workers were not employed in the respective reference years, but were employed at some other time over the 1997-to-2001 period.)

Overall, the distribution of annual work hours looks remarkably stable. With no other information, it might be tempting to conclude that the same people worked long or short hours in both reference years. However,

Table Employees by annual work hours

	1997	2001	Change
	%		
<b>All individuals</b>			
Non-workers	7.0	5.9	-1.1
1 to 1,199	16.7	12.8	-3.9
1,200 to 1,749	11.4	11.9	0.5
1,750 to 2,199	52.5	57.2	4.7
2,200 to 2,399	4.8	4.2	-0.6
2,400 or more	7.6	8.0	0.4
<b>Men</b>			
Non-workers	4.6	3.6	-1.0
1 to 1,199	9.8	6.5	-3.3
1,200 to 1,749	7.2	6.3	-0.9
1,750 to 2,199	60.8	66.0	5.2
2,200 to 2,399	6.3	6.1	-0.2
2,400 or more	11.3	11.4	0.1
<b>Women</b>			
Non-workers	9.5	8.2	-1.3
1 to 1,199	23.7	19.2	-4.5
1,200 to 1,749	15.7	17.6	1.9
1,750 to 2,199	44.0	48.1	4.1
2,200 to 2,399	3.2	2.3	-0.9
2,400 or more	3.8	4.5	0.7

Source: Statistics Canada, Survey of Labour and Income Dynamics

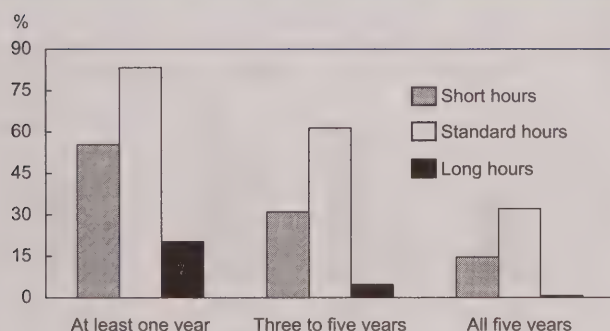
*The authors are with the Business and Labour Market Analysis Division. Andrew Heisz can be reached at 613-951-3748 or [andrew.heisz@statcan.ca](mailto:andrew.heisz@statcan.ca), and Sébastien LaRochelle-Côté at 613-951-0803 or [sebastien.larochelle-cote@statcan.ca](mailto:sebastien.larochelle-cote@statcan.ca).*



the longitudinal data show that stability in work hours over the years is not the norm. In at least one year between 1997 and 2001, more than half of all employees worked short hours, 4 in 5 worked standard hours, and 1 in 5 worked long hours (Chart A). However, the proportion that worked the same broad class of hours in each year was small compared with the cross-sectional results. In all, less than half worked in the same hours group in all five years, with one-third working standard hours, one-seventh working short hours, and less than 1% working long hours. Hence, many more workers experienced at least one year of short or long work hours than the cross-sectional results would suggest. But at the same time, chronic long or short hours were also much less common.

Clearly, many employees had variable annual work hours. This instability can be summarized with the mean absolute deviation of work hours, which gives the average absolute difference between an individual's work hours in a typical year and an actual year (see *Data source and definitions*). A worker with the same annual hours across the five years would have a mean absolute deviation of zero. The typical mean absolute deviation was 200 hours, indicating that the average worker had a variation in annual work hours of about five full-time weeks. However, work-hours variability was strongly polarized, with 1 in 5 having virtually none and 1 in 4 having variability exceeding eight weeks per year.

**Chart A Less than half of workers were in the same annual work-hours category for all five years**



Source: Statistics Canada, Survey of Labour and Income Dynamics, 1997 to 2001

### Data source and definitions

This study uses the 1996 to 2001 longitudinal panel of the **Survey of Labour and Income Dynamics (SLID)**. In SLID, hours worked are collected by asking workers how many hours they 'usually' work for pay during the week, including time off for holidays, paid sick or maternity leave, and usual paid overtime, but excluding unusual paid overtime and all unpaid hours. The information about weekly hours worked is put together with other information about weeks worked to compute individual estimates of annual hours worked. Unpaid absences are subtracted from usual work hours.

The study uses a sample of approximately 8,100 individuals aged 25 to 54 in 1997 who worked at least once between 1997 and 2001. It excludes immigrants who arrived after 1996, emigrants who left before 2001, and individuals who were not physically in the country at any point over the period. Self-employed workers were also excluded.

**Standard hours:** full-year, full-time (1,750 to 2,199 hours)

**Short hours:** low part-time, part-year (1 to 1,199 hours); high part-time, part-year (1,200 to 1,749 hours)

**Long hours:** long hours (2,200 to 2,399 hours); very long hours (2,400 hours or more)

### Concepts and measurements

Representing annual hours as  $h$ , the mean absolute deviation is given by:

$$MAD_i = \left( \sum_{t=1}^5 |h_{it} - \bar{h}_i| \right) \div 5$$

In this formula,  $h_{it}$  represents the annual hours of individual  $i$  in year  $t$ , and  $\bar{h}_i$  is the annual hours for that same person averaged across all five years. Hence  $MAD_i$  simply gives the average absolute difference between an individual's work hours in a typical year and an actual year.

One group stands out as having extreme variability. These workers put in short hours in at least one year and long hours in at least one other. This group, the 'high-low' workers, accounted for less than 8% of the sample. Interestingly, two-thirds of the group managed to average a standard work schedule over the five years, but at the cost of greater instability in annual hours.

### Variable work hours: a cause for concern?

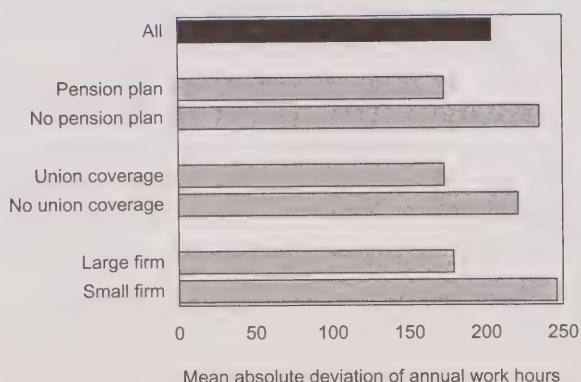
Are variable work hours a cause for concern? Such a pattern may reflect a choice by workers to trade work time for leisure, or the phenomenon may be concentrated among certain highly paid professions in which sabbaticals are the norm. While such a distinction is

difficult to make with any certainty, looking at job characteristics can shed some light on the issue. The job-quality literature often divides the labour market into 'good' and 'bad' jobs. Good jobs have stable full-time hours, pension coverage and permanence, while bad jobs do not. But to what extent is having a bad job associated with highly variable work hours? If workers with high variability in work hours display characteristics associated with low job quality, it then becomes difficult to argue that such hours are their choice.

For example, lack of pension plan coverage, lack of union coverage, and working for a small firm are three characteristics commonly assumed to signal low job quality. In fact, employees in all three of these situations have more variable annual hours than others (Chart B). Those with no pension plan had a 62-hour greater deviation than those with pension coverage, those with no union coverage had a 48-hour greater deviation than unionized employees, and those in a small firm had a 67-hour greater deviation than those in a large firm.

Other characteristics of non-standard work were also associated with variable annual hours. For example, while the overall mean absolute deviation in annual work hours was 204, the deviation was 333 hours for multiple job holders and 272 hours for low-wage workers.

**Chart B Workers with low job quality had more variable annual hours**



Source: Statistics Canada, Survey of Labour and Income Dynamics, 1997 to 2001

## Work hours and well-being

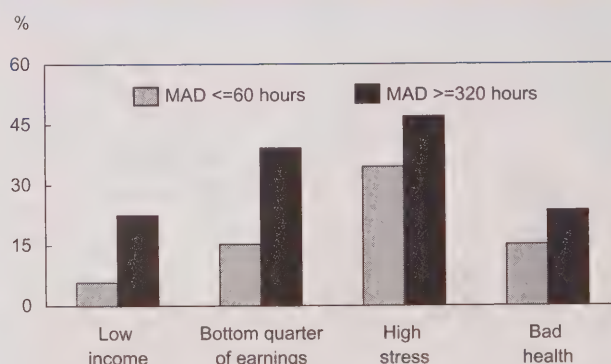
The desirability of having variable work hours may also be tested by looking to see if these workers have lower levels of well-being. That is, did employees with the highest deviation in hours (mean absolute deviation of 320 or more) have higher incidences of low income, low earnings, high stress or bad health than those with comparatively stable hours (mean absolute deviation of 60 hours or less)?

Work-hours instability was associated with having one or more spells of low income over the period; 22.5% of workers in the high deviation group experienced at least one year of low income compared with 5.8% of those in the stable hours group (Chart C). Variability was also associated with having low average annual earnings over the period; 39.2% of those in the high deviation group fell into the bottom quarter of annual earnings, compared with 15.3% in the stable group. Thus, employees with variable annual hours did not maintain a particularly high standard of living through averaging periods of over- and underwork.

The incidence of stress was also much higher in the high variability group. Some 47% of employees in this group reported feeling high stress compared with 34.5% of those with stable hours.

Finally, fully 23.6% of employees with highly varying work hours reported being in bad health at least once between 1997 and 2001 compared with 15.2% of those with stable work hours.

**Chart C Workers with variable annual hours had lower well-being**



Source: Statistics Canada, Survey of Labour and Income Dynamics, 1997 to 2001



To test whether the relationship between working-hours variability and stress or bad health is spurious, a number of regressions controlling for background characteristics such as demographic factors, industry of employment, and job-quality factors were performed. The regressions also included a series of variables designed to assess the well-being of the individual at the beginning of the period, including a dummy variable indicating whether in 1996 the person lived in a low-income family, was very stressed, or was in bad health. The models also included the mean annual hours observed over the 1997-to-2001 period to account for the likelihood that stress and bad health were related to the levels of hours worked. The descriptive results regarding instability in annual hours and stress and bad health were robust and unaffected by background or initial well-being characteristics.

## Conclusion

Discussions related to work hours are typically driven by cross-sectional studies. Much less is known about the persistence of long hours or periods of underemployment. If work hours for many employees are unstable, the possibility arises that time crunch or lack of work may be a smaller problem than the cross-sectional results imply. However, a lack of stability in work hours for individuals might itself be an indicator of low job quality or low well-being. The lack of studies examining the amount and consequences of variation in working hours over time has created a serious gap in our understanding of working time.

Employees face substantial variability in work hours. The occurrence is found more often among those with low-quality and non-standard jobs. Such workers also have higher incidences of low income, lower annual earnings, and a greater likelihood of being very stressed or in bad health. This suggests that it is fairly unlikely many employees are choosing to have variable annual work hours.

A number of policy prescriptions, driven by the polarization of hours seen in cross-sectional results, have called for reducing working time to control the rising trend in overwork. For example, concern over what was regarded as the inequitable allocation of working

hours led to the creation in 1994 of the Advisory Group on Working Time and the Distribution of Work, whose report included the recommendation for "a new public policy priority that emphasizes redistribution and reduction in working time." (Canada 1994, 52). However, few people put in long work hours year after year. Indeed, for many, a period of overwork compensates for a period of underwork, with the end result being an average full-year, full-time work schedule. This lack of persistence in long work hours, plus the high level of individual work-hours variability would form a significant obstacle to the success of working-time regulation.

This study also provides a new perspective on work-life balance. Other research shows that having too many work hours is the most important contributor to stress (Higgins and Duxbury 2002). The present study adds that variation in annual work hours is also an important determinant of stress and bad health. This suggests that policies designed to reduce work-hours variability and not just reduce working time could also benefit workers.

## Perspectives

### References

- Canada. 1994. Advisory Group on Working Time and the Distribution of Work. *Report of the Advisory Group on Working Time and the Distribution of Work*. Hull, Que. Human Resources and Development Canada. HRDC Catalogue no. MP43-336/1994. 96 p.
- Higgins, Chris and Linda Duxbury. 2002. *The 2001 National Work-Life Conflict Study: Report One*. Report prepared for the Healthy Communities Division, Health Canada. Ottawa. 79 p.

This article is adapted from *Work Hours Instability in Canada* by Andrew Heisz and Sébastien LaRochelle-Côté. The research paper is available on the Statistics Canada Web site at <http://www.statcan.ca/english/research/11F0019MIE/11F0019MIE2006278.pdf>.

# Canada's unemployment mosaic, 2000 to 2006

Ernest B. Akyeampong

The unemployment rate is a well-known barometer of labour-market health. The rise in the national unemployment rate in the years immediately following the high-tech meltdown has been replaced by sustained annual declines, resulting in a rate of 6.3% for 2006. This is not only below the 6.8% registered during the boom, but a 30-year low as well.<sup>1</sup>

Of course not all parts of the country have shared equally in the improvement. Some have done better, others worse. Normally, comparisons involve the 10 provinces or 5 regions of Canada, but within each, many distinct labour markets can be found. This article focuses on the 28 census metropolitan areas (CMAs) and the 10 provincial non-CMA areas (see *Data source and definitions*). Using the Labour Force Survey (LFS), the article first tracks unemployment rate dispersion for local labour markets (CMAs and non-CMA areas) between 2000 and 2006. It then examines the comparative labour market performance of these areas based on unemployment rates and rankings, and unemployment duration. Unemployment levels, labour force, and employment are provided in an appendix.

## Unemployment rate dispersion rising

The impressive performance of the national unemployment rate in recent years hides considerable geographic disparities. For example, in 2006 the unemployment rate in the Québec CMA averaged 5.2% compared with 8.4% in nearby Montréal. Similarly, the unemployment rate in Kitchener (5.2%) was much lower than in Windsor (9.0%).

That the unemployment rate will differ by geographic area is generally understood. All things being equal, the dispersion is expected to narrow in periods of economic growth, when the national rate is usually falling

Ernest B. Akyeampong is with the Labour and Household Surveys Analysis Division. He can be reached at 613-951-4624 or [ernest.akyeampong@statcan.ca](mailto:ernest.akyeampong@statcan.ca).

## Measuring dispersion

For a number of reasons, gaps always exist between the national unemployment rate and rates registered by various CMAs and non-CMAs. An increase in the dispersion rate means the gap is widening, and vice versa. In this paper, dispersion rates for CMAs and non-CMA areas are calculated as a weighted mean of the differences between the area and national unemployment rates. Specifically, the absolute difference between each area rate and the national rate is multiplied by the area labour force. These products are summed and the total divided by the national labour force to produce aggregate dispersion. Finally, this is divided by the national unemployment rate to produce percent dispersion.

This is expressed algebraically as:

$$\frac{\sum_{i=1}^{38} |u_i - u_n| \cdot \frac{LF_i}{LF_n}}{u_n}$$

where

$U_i$  = unemployment rate in area  $i$

$U_n$  = national unemployment rate

$LF_i$  = labour force in area  $i$

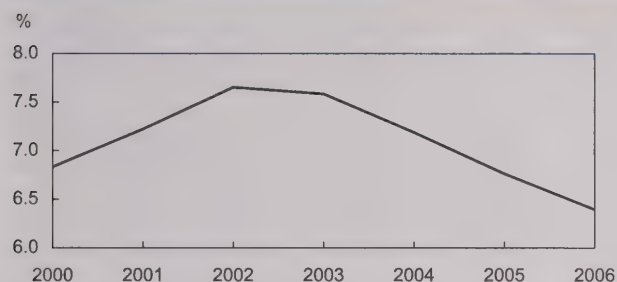
$LF_n$  = national labour force

The dispersion of the average duration of unemployment was calculated in the same fashion.

(Guillemette 2006). However, the reverse has been the case in the current expansion, just as it was in the boom years of the late 1980s (Gower 1996). The variation around the national rate has tended to increase among CMAs and non-CMA areas in the past five years (2002 to 2006) as the national rate has drifted down (Charts A and B) (see *Measuring dispersion*).

Several reasons have been suggested for the rise in dispersion during the current expansion. First, the economic growth may not be strong or widespread (Guillemette 2006). The current expansion has been strongest in Western Canada (Cross and Bowlby 2006; White, Michalowski and Cross 2006), while



**Chart A** Canada's 2006 unemployment rate lowest in 30 years

Source: Statistics Canada, Labour Force Survey, 2000 to 2006

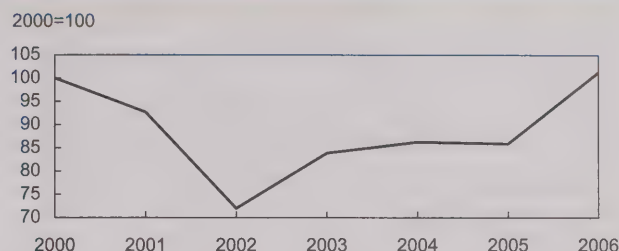
performance in some large metropolitan areas such as Toronto and Montréal has been more moderate. Others suggest that programs such as Employment Insurance may be discouraging the migration of some unemployed from underperforming areas to 'hot' labour markets, thereby accentuating the dispersion (Guillemette 2006).

### Trends and patterns in unemployment rates

Starting from a low of 6.8% in the boom year of 2000, the national unemployment rate rose to 7.2% in 2001, in line with the high-tech meltdown. Unemployment peaked in 2002 (7.7%), stalled the following year at 7.6%, and then declined steadily to 6.3% in 2006 (Chart A). With few exceptions, most areas displayed similar trends (Table 1). The five areas with no clear trends were Prince Edward Island, Windsor, Thunder Bay, non-CMA Ontario, and Regina.

In both 2000 and 2006, Calgary registered among the lowest unemployment rates (4.5% and 3.2% respectively);<sup>2</sup> the highest rates were recorded in non-CMA Newfoundland and Labrador (21.3% and 19.3%).

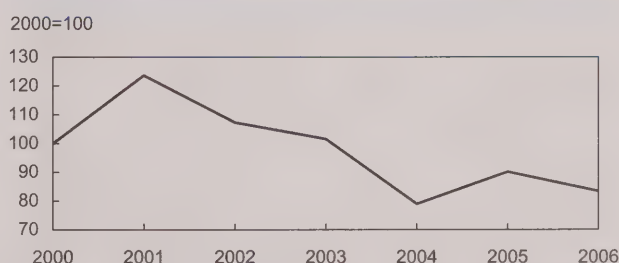
Some areas emerged as perennial best performers, defined here as having the lowest unemployment rates in five of the seven years. Others were perennial poor performers. Nearly all the best performers were in the Prairies (Calgary, non-CMA Alberta, and non-CMA Manitoba, the exception being Victoria). The Alberta areas maintained their enviable position largely as a result of the prosperity brought on by the oil and gas industry and the increased activity in construction. The poor performers were non-CMA

**Chart B** Unemployment rate dispersion has been increasing since 2002

Source: Statistics Canada, Labour Force Survey, 2000 to 2006

Newfoundland and Labrador, Prince Edward Island, non-CMA Nova Scotia, non-CMA New Brunswick, and Windsor.

Both nationally and in a substantial majority of CMAs and non-CMA areas, the unemployment rate in 2006 was lower than in 2000. In eight areas, however, the opposite was true. Except for Montréal, the areas were in Ontario, a province hit by reduced activity in manufacturing overall and the auto industry in particular. High energy costs and reduced exports, due in part to the appreciating Canadian dollar, adversely affected these industries. A similar fate befell the manufacturing industries of Montréal; particularly hard-hit were its aerospace industry as well as the clothing and textile industry. Montréal also saw an employment drop in public administration.

**Chart C** Dispersion in the duration of unemployment dropped sharply between 2001 and 2004

Source: Statistics Canada, Labour Force Survey, 2000 to 2006

**Table 1 Unemployment rate by region**

	2000	2002	2004	2006
	%			
<b>Canada</b>	<b>6.8</b>	<b>7.7</b>	<b>7.2</b>	<b>6.3</b>
<b>Atlantic</b>	<b>11.2</b>	<b>11.4</b>	<b>10.7</b>	<b>9.9</b>
<b>Newfoundland and Labrador</b>	<b>16.7</b>	<b>16.7</b>	<b>15.7</b>	<b>14.8</b>
St. John's	9.5	9.2	9.0	8.1
Non-CMA areas	21.3	21.4	20.0	19.3
<b>Prince Edward Island</b>	<b>12.1</b>	<b>12.0</b>	<b>11.3</b>	<b>11.0</b>
<b>Nova Scotia</b>	<b>9.1</b>	<b>9.6</b>	<b>8.8</b>	<b>7.9</b>
Halifax	6.3	7.6	6.0	5.0
Non-CMA areas	11.4	11.1	11.0	10.3
<b>New Brunswick</b>	<b>10.0</b>	<b>10.2</b>	<b>9.8</b>	<b>8.8</b>
Saint John	7.3	8.3	7.9	6.1
Non-CMA areas	10.6	10.6	10.1	9.3
<b>Quebec</b>	<b>8.5</b>	<b>8.6</b>	<b>8.5</b>	<b>8.0</b>
Saguenay	9.9	11.4	11.0	8.8
Québec	8.1	6.4	5.8	5.2
Trois-Rivières	10.8	10.2	10.7	8.1
Sherbrooke	8.1	7.9	6.9	7.9
Montréal	7.8	8.6	8.7	8.4
Gatineau	6.0	6.8	6.6	5.6
Non-CMA areas	9.7	9.5	9.3	8.6
<b>Ontario</b>	<b>5.8</b>	<b>7.1</b>	<b>6.8</b>	<b>6.3</b>
Ottawa	5.6	7.5	6.6	5.1
Kingston	7.0	6.8	6.4	6.2
Greater Sudbury	8.3	9.2	8.2	7.2
Oshawa	5.8	6.8	5.4	6.5
Toronto	5.5	7.4	7.5	6.6
Hamilton	5.1	6.7	6.3	5.9
St. Catharines-Niagara	6.0	7.4	7.4	6.4
London	6.1	7.1	5.9	6.2
Windsor	5.4	8.1	8.7	9.0
Kitchener	5.6	5.7	5.1	5.2
Thunder Bay	6.5	6.6	8.2	7.5
Non-CMA areas	6.2	6.6	5.8	6.0
<b>Prairies</b>	<b>5.0</b>	<b>5.3</b>	<b>4.9</b>	<b>3.8</b>
<b>Manitoba</b>	<b>5.0</b>	<b>5.1</b>	<b>5.3</b>	<b>4.3</b>
Winnipeg	5.3	5.3	5.5	4.6
Non-CMA areas	4.3	4.8	5.0	3.8
<b>Saskatchewan</b>	<b>5.1</b>	<b>5.7</b>	<b>5.3</b>	<b>4.7</b>
Regina	4.9	5.5	5.0	4.9
Saskatoon	5.6	6.1	6.2	4.4
Non-CMA areas	5.0	5.5	5.1	4.7
<b>Alberta</b>	<b>5.0</b>	<b>5.3</b>	<b>4.6</b>	<b>3.4</b>
Calgary	4.5	5.7	5.0	3.2
Edmonton	5.6	5.2	4.8	3.9
Non-CMA areas	4.9	4.9	4.1	3.3
<b>British Columbia</b>	<b>7.1</b>	<b>8.5</b>	<b>7.2</b>	<b>4.8</b>
Abbotsford	7.5	7.5	6.4	4.5
Vancouver	5.8	7.7	6.7	4.4
Victoria	6.7	7.0	5.3	3.7
Non-CMA areas	9.2	10.2	8.3	5.6

Source: Statistics Canada, Labour Force Survey, 2000 to 2006

**Data source and definitions**

The **Labour Force Survey (LFS)** collects information each month on labour market activity from the civilian, non-institutionalized population 15 years of age and over. The territories are excluded from the national total, as are persons living on Indian reserves. The survey samples approximately 54,000 households, with each remaining in the sample for six consecutive months.

A **census metropolitan area (CMA)** consists of an urban core with a population of 100,000 or more, together with adjacent urban or rural areas that have a high degree of economic and social integration with the core. Subtracting CMAs from the provincial total produces residuals consisting of smaller urban and rural areas. These are referred to as **non-CMA areas**. All of Prince Edward Island is defined as a non-CMA. While these provincial residuals obviously contain many local variations in labour market conditions, such detail is beyond the scope of this article.

The duration of unemployment describes how long (usually in weeks) someone has continuously been looking for a job. The LFS, by design, measures periods of continuous incomplete job search. Information on completed spells can be obtained from longitudinal data sources such as the Survey of Labour and Income Dynamics (SLID).

**Losses in ranking centred in Ontario**

One way of demonstrating the fortunes of the CMAs and non-CMA areas is by way of changes in unemployment rate rank between 2000 and 2006 (Table 2). By this measure, labour markets in Ontario fared worst. Of the 16 areas that saw a deterioration in rank over the period, 9 were in Ontario. In Quebec, Montréal and to a lesser



**Table 2 Areas ranked by unemployment rate**

	2000	2002	2004	2006	2000 to 2006
	Rank				change
Calgary	2	7	3	1	1
Non-CMA Alberta	3	2	1	2	1
Victoria	22	17	8	3	19
Non-CMA Manitoba	1	1	3	4	-3
Edmonton	10	3	2	5	5
Saskatoon	10	9	15	6	4
Vancouver	14	24	21	6	8
Abbotsford	25	21	17	8	17
Winnipeg	7	4	10	9	-2
Non-CMA Saskatchewan	5	5	6	10	-5
Regina	3	5	3	11	-8
Halifax	20	23	14	12	8
Ottawa	10	21	19	13	-3
Québec	27	10	11	14	13
Kitchener	10	7	6	14	-4
Gatineau	16	14	19	16	0
Non-CMA British Columbia	30	32	28	16	14
Hamilton	6	13	16	18	-12
Non-CMA Ontario	19	11	11	19	0
Saint John	24	27	25	20	4
Kingston	23	14	17	21	2
London	18	18	13	21	-3
St. Catharines–Niagara	16	19	23	23	-7
Oshawa	14	14	9	24	-10
Toronto	9	19	24	25	-16
Greater Sudbury	29	29	26	26	3
Thunder Bay	21	11	26	27	-6
Sherbrooke	27	25	22	28	-1
St. John's	31	29	31	29	2
Trois-Rivières	35	32	34	29	6
Montréal	26	28	29	31	-5
Non-CMA Quebec	32	31	32	32	0
Saguenay	33	36	35	33	0
Windsor	8	26	29	34	-26
Non-CMA New Brunswick	34	34	33	35	-1
Non-CMA Nova Scotia	36	35	35	36	0
Prince Edward Island	37	37	37	37	0
Non-CMA Newfoundland and Labrador	38	38	38	38	0

Note: Area with the lowest unemployment rate is ranked number 1.  
Source: Statistics Canada, Labour Force Survey, 2000 to 2006

degree Sherbrooke also lost some ground, while in Saskatchewan, Regina and the non-CMA areas saw their rankings decline.

Of the five CMAs that registered the largest drops in ranking between 2000 and 2006, four were in Ontario's Golden Horseshoe (Oshawa, Hamilton, Toronto and

Windsor) and the fifth was Regina (Table 3). The better performance of the western labour markets is also evident in their strongly positive rank changes. Four of the five areas with the best improvement were in British Columbia: Victoria, Abbotsford, non-CMA British Columbia, and Vancouver. B.C.'s

**Table 3 Areas with largest changes in unemployment rate rank**

	2000 to 2006
<b>Improved</b>	
Victoria	19
Abbotsford	17
Non-CMA British Columbia	14
Québec	13
Vancouver and Halifax	8
<b>Worse</b>	
Regina	-8
Oshawa	-10
Hamilton	-12
Toronto	-16
Windsor	-26

Source: Statistics Canada, Labour Force Survey, 2000 to 2006

labour market improvements came on the heels of gains in resource-based industries, construction and transportation, and in increased exports to the Far East, notably China. The Québec CMA also showed a significant improvement in ranking. Industries here registering respectable employment growth included public administration; information, culture and recreation; and transportation and warehousing.

### Average unemployment duration falls in most CMAs

Average unemployment duration (weeks of continuous job search) provides one measure of the degree of difficulty faced by those searching for a job (Table 4).<sup>3</sup>

Unlike trends in the unemployment rate, a positive picture emerges from the average unemployment duration (Chart C). At the national level, duration fell by about 3 weeks (from 19.8 to 16.7 weeks) between 2000 and 2006. Declines were also registered in most areas

**Table 4 Average duration of unemployment by region**

	2000	2006	Change	
	Weeks			%
<b>Canada</b>	<b>19.8</b>	<b>16.7</b>	<b>-3.1</b>	<b>-15.7</b>
<b>Atlantic</b>	<b>20.4</b>	<b>16.0</b>	<b>-4.4</b>	<b>-21.6</b>
<b>Newfoundland and Labrador</b>	<b>25.9</b>	<b>19.1</b>	<b>-6.8</b>	<b>-26.3</b>
St. John's	25.9	17.0	-8.9	-34.4
Non-CMA areas	25.9	19.7	-6.2	-23.9
<b>Prince Edward Island</b>	<b>13.2</b>	<b>14.3</b>	<b>1.1</b>	<b>8.3</b>
<b>Nova Scotia</b>	<b>20.1</b>	<b>14.7</b>	<b>-5.4</b>	<b>-26.9</b>
Halifax	21.3	12.6	-8.7	-40.8
Non-CMA areas	19.6	15.5	-4.1	-20.9
<b>New Brunswick</b>	<b>16.2</b>	<b>14.4</b>	<b>-1.8</b>	<b>-11.1</b>
Saint John	19.9	12.6	-7.3	-36.7
Non-CMA areas	15.6	14.6	-1.0	-6.4
<b>Quebec</b>	<b>24.8</b>	<b>20.4</b>	<b>-4.4</b>	<b>-17.7</b>
Saguenay	20.7	22.4	1.7	8.2
Québec	27.4	17.7	-9.7	-35.4
Trois-Rivières	33.0	21.7	-11.3	-34.2
Sherbrooke	24.4	18.7	-5.7	-23.4
Montréal	24.5	21.8	-2.7	-11.0
Gatineau	23.8	17.4	-6.4	-26.9
Non-CMA areas	24.4	18.9	-5.5	-22.5
<b>Ontario</b>	<b>17.7</b>	<b>15.8</b>	<b>-1.9</b>	<b>-10.7</b>
Ottawa	17.2	13.5	-3.7	-21.5
Kingston	17.4	16.0	-1.4	-8.0
Greater Sudbury	18.6	13.9	-4.7	-25.3
Oshawa	13.5	16.0	2.5	18.5
Toronto	17.9	16.7	-1.2	-6.7
Hamilton	19.7	16.4	-3.3	-16.8
St. Catharines–Niagara	17.6	13.4	-4.2	-23.9
London	17.3	15.6	-1.7	-9.8
Windsor	16.2	15.2	-1.0	-6.2
Kitchener	18.2	13.1	-5.1	-28.0
Thunder Bay	21.1	16.0	-5.1	-24.2
Non-CMA areas	17.7	15.4	-2.3	-13.0
<b>Prairies</b>	<b>14.0</b>	<b>11.6</b>	<b>-2.4</b>	<b>-17.1</b>
<b>Manitoba</b>	<b>16.2</b>	<b>14.3</b>	<b>-1.9</b>	<b>-11.7</b>
Winnipeg	16.2	15.2	-1.0	-6.2
Non-CMA areas	16.1	12.1	-4.0	-24.8
<b>Saskatchewan</b>	<b>15.8</b>	<b>11.5</b>	<b>-4.3</b>	<b>-27.2</b>
Regina	16.8	12.5	-4.3	-25.6
Saskatoon	16.4	9.2	-7.2	-43.9
Non-CMA areas	15.1	12.1	-3.0	-19.9
<b>Alberta</b>	<b>12.6</b>	<b>10.5</b>	<b>-2.1</b>	<b>-16.7</b>
Calgary	13.7	9.1	-4.6	-33.6
Edmonton	12.1	8.4	-3.7	-30.6
Non-CMA areas	12.3	14.1	1.8	14.6
<b>British Columbia</b>	<b>19.0</b>	<b>14.7</b>	<b>-4.3</b>	<b>-22.6</b>
Abbotsford	21.7	11.2	-10.5	-48.4
Vancouver	18.4	16.0	-2.4	-13.0
Victoria	18.2	21.2	3.0	16.5
Non-CMA areas	19.4	12.4	-7.0	-36.1

Source: Statistics Canada, Labour Force Survey, 2000 and 2006

(33). Whereas 8 areas registered a higher unemployment rate in 2006, only 5 areas had a higher average unemployment duration (Prince Edward Island, Saguenay, Oshawa, non-CMA Alberta, and Victoria). Indeed, except for Oshawa, all areas in Ontario had shorter durations in 2006. The rise in duration in Victoria is intriguing since this CMA was among those registering the best improvement in unemployment rate.

In addition to the fairly steep drop in average unemployment duration in most areas, the degree of dispersion tightened. In 2000, duration ranged from just over 12 weeks in Edmonton and non-CMA Alberta to 33 weeks in Trois Rivières (Table 4). By 2006, it ranged from around 8 weeks in Edmonton to about 22 weeks in Saguenay, Trois Rivières and Montréal.

## Summary

The benefits of the current economic expansion have not been shared equally by the various CMA and non-CMA areas across Canada. The unequal distribution is clearly evident in the disparities observed in unemployment rate movements in the different geographical areas.

The past four years have witnessed an improvement in unemployment rates in many areas. Alberta and British Columbia CMAs and non-CMA areas especially have recorded significant improvements, reflecting the boom in oil, gas and other resource-based industries, as well as increased activity in construction and transportation. Only two CMAs, Windsor and Thunder Bay, have seen some recent deterioration or fluctuation in their unemployment rates. In Windsor,



this was primarily due to setbacks in manufacturing industries in general and the auto industry in particular. The overall result has been an increase in the unemployment rate dispersion over the past several years.

However, the overall picture emerging from the average duration of unemployment in the 2000s is more encouraging. Not only did the average weeks of continuous job search fall between 2000 and 2006 in most areas, the difference between the shortest and longest also shrank.

### Perspectives

## Appendix

Areas in Ontario registered the largest increases in numbers unemployed. This paper examined shifts in unemployment through the unemployment rate and ranking, both measures being abstract. However, the number of people unemployed is also of interest.

At the national level, the number of unemployed increased by 2.4% (26,000) between 2000 and 2006. Almost all of the 15 areas registering increases in unemployment numbers were located in Ontario (11) and Quebec (3). The other CMA recording an increase was Regina. Some of the increases were fairly large. For example, unemployment rose in Windsor by 81% (7,000), in Toronto by 38% (54,000), and in Oshawa by 38% (3,000). In Montréal, it rose by 19% (27,000).

The remaining 23 areas recorded decreases in unemployment, with significant declines being registered in Québec (-28% or -8,000), Edmonton (-22% or -6,000), Victoria (-40% or -4,000), and non-CMA British Columbia (-35% or -24,000).

**Table A1 Unemployment by region**

	2000	2006	Change	
	'000	'000	'000	%
<b>Canada</b>	<b>1,082.8</b>	<b>1,108.4</b>	<b>25.6</b>	<b>2.4</b>
All CMAS	654.2	716.3	62.1	9.5
All non-CMA areas	428.6	392.1	-36.5	-8.5
<b>Atlantic</b>	<b>126.6</b>	<b>118.3</b>	<b>-8.3</b>	<b>-6.6</b>
<b>Newfoundland and Labrador</b>	<b>39.8</b>	<b>37.5</b>	<b>-2.3</b>	<b>-5.8</b>
St. John's	8.8	8.2	-0.6	-6.8
Non-CMA areas	31.0	29.3	-1.7	-5.5
<b>Prince Edward Island</b>	<b>8.6</b>	<b>8.5</b>	<b>-0.1</b>	<b>-1.2</b>
<b>Nova Scotia</b>	<b>41.4</b>	<b>38.1</b>	<b>-3.3</b>	<b>-8.0</b>
Halifax	12.6	10.8	-1.8	-14.3
Non-CMA areas	28.8	27.3	-1.5	-5.2
<b>New Brunswick</b>	<b>36.8</b>	<b>34.2</b>	<b>-2.6</b>	<b>-7.1</b>
Saint John	4.8	4.0	-0.8	-16.7
Non-CMA areas	32.0	30.2	-1.8	-5.6
<b>Quebec</b>	<b>314.7</b>	<b>328.7</b>	<b>14.0</b>	<b>4.4</b>
Saguenay	7.2	6.8	-0.4	-5.6
Québec	28.7	20.8	-7.9	-27.5
Sherbrooke	6.5	7.0	0.5	7.7
Trois-Rivières	7.4	5.9	-1.5	-20.3
Montréal	142.5	169.8	27.3	19.2
Gatineau	8.5	9.5	1.0	11.8
Non-CMA areas	114.0	108.9	-5.1	-4.5
<b>Ontario</b>	<b>355.6</b>	<b>434.6</b>	<b>79.0</b>	<b>22.2</b>
Ottawa	25.3	25.9	0.6	2.4
Kingston	4.9	5.1	0.2	4.1
Oshawa	9.0	12.4	3.4	37.8
Toronto	142.5	196.6	54.1	38.0
Hamilton	18.5	23.5	5.0	27.0
St. Catharines-Niagara	12.1	12.9	0.8	6.6
Kitchener	13.2	13.8	0.6	4.5
London	14.8	16.2	1.4	9.5
Windsor	9.0	16.3	7.3	81.1
Greater Sudbury	6.8	6.1	-0.7	-10.3
Thunder Bay	4.2	5.0	0.8	19.0
Non-CMA areas	95.3	100.9	5.6	5.9
<b>Prairies</b>	<b>137.3</b>	<b>117.3</b>	<b>-20.0</b>	<b>-14.6</b>
<b>Manitoba</b>	<b>28.8</b>	<b>26.5</b>	<b>-2.3</b>	<b>-8.0</b>
Winnipeg	20.0	18.5	-1.5	-7.5
Non-CMA areas	8.9	8.0	-0.9	-10.1
<b>Saskatchewan</b>	<b>25.7</b>	<b>24.0</b>	<b>-1.7</b>	<b>-6.6</b>
Regina	5.3	5.6	0.3	5.7
Saskatoon	6.8	5.9	-0.9	-13.2
Non-CMA areas	13.5	12.5	-1.0	-7.4
<b>Alberta</b>	<b>82.8</b>	<b>66.8</b>	<b>-16.0</b>	<b>-19.3</b>
Calgary	25.8	21.8	-4.0	-15.5
Edmonton	28.9	22.7	-6.2	-21.5
Non-CMA areas	28.1	22.3	-5.8	-20.6
<b>British Columbia</b>	<b>148.6</b>	<b>109.6</b>	<b>-39.0</b>	<b>-26.2</b>
Vancouver	63.6	54.8	-8.8	-13.8
Victoria	11.1	6.7	-4.4	-39.6
Abbotsford	5.5	3.9	-1.6	-29.1
Non-CMA areas	68.4	44.2	-24.2	-35.4

Source: Statistics Canada, Labour Force Survey, 2000 and 2006

Table A2 Labour force by region

	2000	2006	Change	
	'000		'000	%
<b>Canada</b>	<b>15,847.0</b>	<b>17,592.8</b>	<b>1,745.8</b>	<b>11.0</b>
All CMAS	10,560.3	11,874.2	1,313.9	12.4
All non-CMA areas	5,286.7	5,718.6	431.9	8.2
<b>Atlantic</b>	<b>1,129.9</b>	<b>1,199.8</b>	<b>69.9</b>	<b>6.2</b>
<b>Newfoundland and Labrador</b>	<b>237.8</b>	<b>253.1</b>	<b>15.3</b>	<b>6.4</b>
St. John's	92.2	101.6	9.4	10.2
Non-CMA areas	145.6	151.5	5.9	4.1
<b>Prince Edward Island</b>	<b>71.3</b>	<b>77.1</b>	<b>5.8</b>	<b>8.1</b>
<b>Nova Scotia</b>	<b>452.8</b>	<b>480.0</b>	<b>27.2</b>	<b>6.0</b>
Halifax	200.9	215.7	14.8	7.4
Non-CMA areas	251.8	264.3	12.5	5.0
<b>New Brunswick</b>	<b>368.0</b>	<b>389.6</b>	<b>21.6</b>	<b>5.9</b>
Saint John	65.7	65.9	0.2	0.3
Non-CMA areas	302.3	323.7	21.4	7.1
<b>Quebec</b>	<b>3,717.5</b>	<b>4,094.2</b>	<b>376.7</b>	<b>10.1</b>
Saguenay	72.7	77.2	4.5	6.2
Québec	354.3	397.4	43.1	12.2
Trois-Rivières	68.6	73.2	4.6	6.7
Sherbrooke	79.8	88.8	9.0	11.3
Montréal	1,819.7	2,026.7	207.0	11.4
Gatineau	142.4	169.7	27.3	19.2
Non-CMA areas	1,180.0	1,261.1	81.1	6.9
<b>Ontario</b>	<b>6,172.7</b>	<b>6,927.3</b>	<b>754.6</b>	<b>12.2</b>
Ottawa	454.3	509.0	54.7	12.0
Kingston	70.1	82.4	12.3	17.5
Greater Sudbury	82.3	84.2	1.9	2.3
Oshawa	155.9	189.7	33.8	21.7
Toronto	2,597.7	2,998.7	401.0	15.4
Hamilton	362.1	395.3	33.2	9.2
St. Catharines–Niagara	202.5	203.1	0.6	0.3
London	243.5	261.8	18.3	7.5
Windsor	166.4	181.3	14.9	9.0
Kitchener	234.4	265.2	30.8	13.1
Thunder Bay	65.0	66.5	1.5	2.3
Non-CMA areas	1,538.4	1,690.2	151.8	9.9
<b>Prairies</b>	<b>2,747.1</b>	<b>3,066.5</b>	<b>319.4</b>	<b>11.6</b>
<b>Manitoba</b>	<b>581.1</b>	<b>613.5</b>	<b>32.4</b>	<b>5.6</b>
Winnipeg	375.4	400.7	25.3	6.7
Non-CMA areas	205.7	212.8	7.1	3.5
<b>Saskatchewan</b>	<b>499.2</b>	<b>515.6</b>	<b>16.4</b>	<b>3.3</b>
Regina	108.7	115.2	6.5	6.0
Saskatoon	121.9	133.9	12.0	9.8
Non-CMA areas	268.5	266.5	-2.0	-0.7
<b>Alberta</b>	<b>1,666.8</b>	<b>1,937.5</b>	<b>270.7</b>	<b>16.2</b>
Calgary	567.7	676.9	109.2	19.2
Edmonton	520.0	584.0	64.0	12.3
Non-CMA areas	579.1	676.6	97.5	16.8
<b>British Columbia</b>	<b>2,079.9</b>	<b>2,305.1</b>	<b>225.2</b>	<b>10.8</b>
Abbotsford	73.8	86.3	12.5	16.9
Vancouver	1,095.7	1,241.9	146.2	13.3
Victoria	166.4	182.0	15.6	9.4
Non-CMA areas	743.9	794.9	51.0	6.9

Source: Statistics Canada, Labour Force Survey, 2000 and 2006



**Table A3 Employment by region**

	2000	2006	Change	
	'000	'000	'000	%
<b>Canada</b>	<b>14,764.2</b>	<b>16,484.3</b>	<b>1,720.1</b>	<b>11.7</b>
All CMAS	9,906.0	11,157.8	1,251.8	12.6
All non-CMA areas	4,858.2	5,326.5	468.3	9.6
<b>Atlantic</b>	<b>1,003.3</b>	<b>1,081.5</b>	<b>78.2</b>	<b>7.8</b>
<b>Newfoundland and Labrador</b>	<b>198.0</b>	<b>215.7</b>	<b>17.7</b>	<b>8.9</b>
St. John's	83.5	93.4	9.9	11.9
Non-CMA areas	114.6	122.2	7.6	6.6
<b>Prince Edward Island</b>	<b>62.7</b>	<b>68.6</b>	<b>5.9</b>	<b>9.4</b>
<b>Nova Scotia</b>	<b>411.4</b>	<b>441.8</b>	<b>30.4</b>	<b>7.4</b>
Halifax	188.3	204.8	16.5	8.8
Non-CMA areas	223.0	237.0	14.0	6.3
<b>New Brunswick</b>	<b>331.2</b>	<b>355.4</b>	<b>24.2</b>	<b>7.3</b>
Saint John	60.9	61.9	1.0	1.6
Non-CMA areas	270.3	293.5	23.2	8.6
<b>Quebec</b>	<b>3,402.8</b>	<b>3,765.4</b>	<b>362.6</b>	<b>10.7</b>
Saguenay	65.6	70.4	4.8	7.3
Québec	325.6	376.6	51.0	15.7
Sherbrooke	73.3	81.9	8.6	11.7
Trois-Rivières	61.2	67.3	6.1	10.0
Montréal	1,677.2	1,856.8	179.6	10.7
Gatineau	133.8	160.2	26.4	19.7
Non-CMA areas	1,066.0	1,152.1	86.1	8.1
<b>Ontario</b>	<b>5,817.1</b>	<b>6,492.7</b>	<b>675.6</b>	<b>11.6</b>
Ottawa	429.1	483.1	54.0	12.6
Kingston	65.1	77.3	12.2	18.7
Oshawa	146.9	177.3	30.4	20.7
Toronto	2,455.3	2,802.1	346.8	14.1
Hamilton	343.6	371.9	28.3	8.2
St. Catharines–Niagara	190.4	190.2	-0.2	-0.1
Kitchener	221.2	251.4	30.2	13.7
London	228.7	245.6	16.9	7.4
Windsor	157.4	165.1	7.7	4.9
Greater Sudbury	75.5	78.1	2.6	3.4
Thunder Bay	60.9	61.5	0.6	1.0
Non-CMA areas	1,443.1	1,589.3	146.2	10.1
<b>Prairies</b>	<b>2,609.8</b>	<b>2,949.2</b>	<b>339.4</b>	<b>13.0</b>
<b>Manitoba</b>	<b>552.3</b>	<b>587.0</b>	<b>34.7</b>	<b>6.3</b>
Winnipeg	355.4	382.2	26.8	7.5
Non-CMA areas	196.9	204.8	7.9	4.0
<b>Saskatchewan</b>	<b>473.5</b>	<b>491.6</b>	<b>18.1</b>	<b>3.8</b>
Regina	103.4	109.6	6.2	6.0
Saskatoon	115.1	128.0	12.9	11.2
Non-CMA areas	255.0	254.0	-1.0	-0.4
<b>Alberta</b>	<b>1,584.0</b>	<b>1,870.7</b>	<b>286.7</b>	<b>18.1</b>
Calgary	541.9	655.1	113.2	20.9
Edmonton	491.1	561.3	70.2	14.3
Non-CMA areas	551.0	654.2	103.2	18.7
<b>British Columbia</b>	<b>1,931.3</b>	<b>2,195.5</b>	<b>264.2</b>	<b>13.7</b>
Vancouver	1,032.1	1,187.1	155.0	15.0
Victoria	155.3	175.2	19.9	12.8
Abbotsford	68.3	82.3	14.0	20.5
Non-CMA areas	675.6	750.8	75.2	11.1

Source: Statistics Canada, Labour Force Survey, 2000 and 2006

**■ Notes**

1 Caution must be exercised when comparing recent LFS employment and unemployment estimates with those prior to 1976—when the questionnaire underwent significant changes.

2 In actual fact, in 2000 Calgary's unemployment rate (4.5%) was bettered by that of non-CMA Manitoba (4.3%).

3 The LFS average durations in Table 4 are, by survey design, for incomplete job search. These are shorter than completed search durations provided by other surveys such as the Survey of Labour and Income Dynamics (SLID). Notwithstanding, the LFS data still provide useful insights on labour market health.

**■ References**

Cross, Philip and Geoff Bowlby. 2006. "The Alberta economic juggernaut: The boom on the rose." *Canadian Economic Observer*. Vol. 19, no. 9, September. Statistics Canada Catalogue no. 11-010-XIB.

<http://www.statcan.ca/english/freepub/11-010-XIB/00906/feature.htm> (accessed January 2, 2007).

Gower, Dave. 1996. "Canada's unemployment mosaic in the 1990s." *Perspectives on Labour and Income*. Vol. 8, no. 1, Spring. Statistics Canada Catalogue no. 75-001-XPE. p. 16–22.

Guillemette, Yvan. 2006. *Misplaced Talent: The Rising Dispersion of Unemployment Rates in Canada*. Toronto. C.D. Howe Institute. 5 p.

White, P., M. Michalowski and P. Cross. 2006. "The west coast boom." *Canadian Economic Observer*. Vol. 19, no. 5, May. Statistics Canada Catalogue no. 11-010-XIB.

<http://www.statcan.ca/english/freepub/11-010-XIB/00506/feature.htm> (accessed January 2, 2007).

# The Aboriginal labour force in Western Canada

Jacqueline Luffman and Deborah Sussman

**A**s Canada's labour market tightens, employers are scouring many sources in their search for skilled workers. One such source is the Aboriginal population. By the end of 2017, Aboriginal people of working age (15 and older) will number close to a million—about 3.4% of the working-age population overall (Statistics Canada 2005). With anticipated shortages in many areas of the labour force, this growing population may constitute an important pool of labour.

Aboriginal people have a much younger average age than other Canadians and their educational attainment is generally lower. Geographically, they are concentrated in remote areas (some reserves and in the North) and in a few urban centres (mostly Western Canadian cities). They are also less likely to be self-employed. All these factors play a major role in their labour market experiences and are critical to understanding both the challenges and opportunities for their future employment growth.

Over the coming years, the proportion of Aboriginal people in the young adult population (aged 20 to 29) is projected to grow significantly—more than for the same age group overall. Certain provinces will be particularly affected. For example, in Saskatchewan, the proportion of Aboriginal people in their 20s is expected to almost double—from 17% of the Aboriginal population in 2001 to 30% in 2017. Similarly, the proportion in Manitoba, also 17% in 2001, is projected to grow to 23%. These young people offer an enormous potential for increasing Aboriginal people's participation in the labour market, especially in

these provinces (Consulbec 2002). The degree to which such provinces can integrate these young people into the labour force will become increasingly important.

How do Aboriginal and non-Aboriginal people compare in terms of employment, occupational distribution, and skill levels. Are gaps between the two closing? Are some segments of the Aboriginal population faring better than others? What is the relationship between educational attainment and labour market success? This article uses the 2005 Labour Force Survey (LFS) to compare characteristics of the off-reserve Aboriginal and the non-Aboriginal populations in the Western Canada labour force. Using the 2001 Census, the labour force situation of the entire Aboriginal population is also presented in an appendix. Where possible, comparisons will be made between the two sources (see *Data sources and definitions*).

## Aboriginal unemployment higher in 2001

In 2001, Aboriginal people made up about 2.7% of Canada's working-age population and about 2.5% of its labour force (see *Appendix*). Of the roughly 652,000 Aboriginal people aged 15 or over, 61% lived in Western Canada. Nationally, they had lower participation and employment rates (60.6% and 49.7% respectively) than non-Aboriginals (66.1% and 61.8%), and a much higher unemployment rate (18.0% versus 6.5%).

Aboriginal labour market performance varied considerably from one region of the country to another. Provinces with the highest percentage of Aboriginal people—Manitoba and Saskatchewan—had Aboriginal unemployment rates of about 18% and 22% respectively. This was more than four times the unemployment rate of the non-Aboriginal population in both these provinces. Aboriginal unemployment rates were also high in the Atlantic provinces (where the proportion of Aboriginal people is lower), ranging from 20% in Nova Scotia to 32% in Newfoundland and Labrador.

---

*Jacqueline Luffman is with Dissemination Division. She can be reached at 613-951-1563 or [jacqueline.luffman@statcan.ca](mailto:jacqueline.luffman@statcan.ca). Deborah Sussman is with the Labour and Household Surveys Analysis Division. She can be reached at 613-951-4226 or [deborah.sussman@statcan.ca](mailto:deborah.sussman@statcan.ca).*



## Manitoba and British Columbia led Aboriginal job growth

How have Aboriginal people been faring since 2001? The only source of labour market information on Aboriginal people since the 2001 Census is the Labour Force Survey, which covers only those living off-reserve in Western Canada. This segment is the focus of the rest of the article.<sup>1</sup>

Aboriginal people form a significant part of the labour force in Western Canada where the economy, particularly in Alberta and British Columbia, has enjoyed renewed growth in recent years.<sup>2</sup> This growth was driven by mining and construction in Alberta and by construction, real estate and transportation in British Columbia (White, Michalowski and Cross 2006). Aboriginal employment grew 23% between 2001 and 2005 compared with only 11% for non-Aboriginals.

Over the same period, the Aboriginal unemployment rate dropped 3 percentage points while their participation rate rose—particularly among women (Table 1). Although the unemployment gap narrowed, the Aboriginal unemployment rate still remained more than double that of the non-Aboriginal population in 2005.

With its abundance of natural resources, Alberta has led job growth in the West.<sup>3</sup> Not surprisingly then, Aboriginal people in Alberta had the highest labour force participation (70.0%) and employment rates (64.1%) and the lowest unemployment rate (8.5%) among the Western provinces. Alberta's economic prosperity benefited everyone as evidenced by its overall unemployment rate of only 3.9% in 2005.

Aboriginal people in Manitoba and British Columbia saw the highest growth in employment between 2001 and 2005 (Chart A). Manitoba's growth rate was 30%,

### Aboriginals in cities faring better

Although the largest CMAs offer more varied opportunities for employment, some are still struggling with high rates of unemployment within their Aboriginal population. In 2001, the highest percentage shares of working-age Aboriginal people were found in Saskatoon (7.5%), Winnipeg (7.4%) and Regina (6.5%). In absolute terms, Winnipeg had the largest number of Aboriginal people (35,800) of all the CMAs, followed by Edmonton (26,500). In 2001, Aboriginal people in Saskatoon and Regina had the lowest par-

ticipation rates and highest unemployment rates among the Western CMAs. In 2005, Regina still had the lowest participation and the highest unemployment rates among Aboriginal people. The gap in labour market outcomes between Aboriginal and non-Aboriginal people varies greatly by city, even within the same province. In 2005, Vancouver and Calgary had the highest labour force participation rates, even surpassing non-Aboriginals. Calgary had the lowest unemployment rate, followed by Victoria.

	Winnipeg	Saskatoon	Regina	Edmonton	Victoria	Calgary	Vancouver
<b>2001</b>							
<b>Non-Aboriginal</b>							
Participation rate	68.6	70.1	70.8	71.9	63.8	74.8	65.8
Employment rate	65.5	66.6	67.6	68.6	60.2	71.5	61.5
Unemployment rate	4.5	4.9	4.6	4.5	5.6	4.3	6.5
<b>Aboriginal</b>							
Participation rate	63.5	56.8	56.8	65.9	62.1	74.7	62.3
Employment rate	55.1	45.3	46.3	57.4	53.4	67.7	53.5
Unemployment rate	13.2	20.2	18.5	12.1	13.9	9.4	14.0
<b>2005</b>							
<b>Non-Aboriginal</b>							
Participation rate	69.8	71.7	72.0	70.5	64.8	73.7	67.1
Employment rate	66.7	68.4	69.0	67.5	62.0	70.8	63.4
Unemployment rate	4.4	4.5	4.2	4.3	4.3	3.9	5.6
<b>Aboriginal</b>							
Participation rate	63.8	62.4	59.9	66.0	63.6	75.1	70.9
Employment rate	57.5	54.3	50.6	58.7	58.1	70.8	60.4
Unemployment rate	9.8	12.9	15.5	11.1	8.6	5.7	14.8

Sources: Statistics Canada, Census of Population, 2001; Labour Force Survey, 2005

five times the non-Aboriginal rate. Although British Columbia's Aboriginal participation rate (66%) was lower than Alberta's, it was up from 2001. By contrast, Saskatchewan continued to have the lowest Aboriginal employment rate (52%), despite a small increase since 2001. In addition, Saskatchewan had the largest employment rate gap in 2005 (14 percentage points compared with 7 for all of Western Canada).

### Employment rate gap narrows

The Aboriginal employment rate was 58% in 2005, up from 54% in 2001. Because the rate increased less than 1 percentage point among non-Aboriginals while increasing strongly among Aboriginal people, the gap between the two groups narrowed, particularly for women (Chart B).

Labour force participation rates among men appear to be stabilizing for both populations. The gap, however, decreased slightly for men and much more for women. With rising employment, unemployment rates declined for both Aboriginal men and women in 2005.

### Aboriginal education levels improving

The large gap in educational attainment between Aboriginal and non-Aboriginal people has been well-documented. Although Aboriginal people living off-reserve are generally better educated than their on-reserve counterparts, they still lag behind non-Aboriginals.

Western Canadians are increasingly likely to have university degrees—18% in 2005 versus 15% in 2001. During the same short period, Aboriginal people living off-

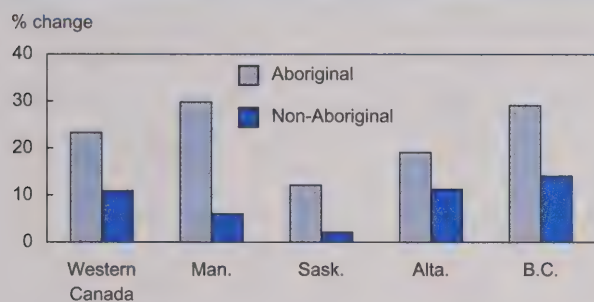
**Table 1 The off-reserve Aboriginal labour force in Western Canada**

	2001		2005	
	Aboriginal	Non-Aboriginal	Aboriginal	Non-Aboriginal
			'000	
Population 15 and over	281	6,690	324	7,317
Labour force	181	4,575	215	5,025
Employment	153	4,320	189	4,790
Unemployment	28	255	26	235
<b>Both sexes</b>				
			%	
Aboriginal labour force	3.8	...	4.1	...
Employment rate	54.4	64.5	58.3	65.5
Unemployment rate	15.5	5.6	12.1	4.7
Participation rate	64.4	68.4	66.4	68.7
<b>Men</b>				
Aboriginal labour force	3.7	...	3.8	...
Employment rate	59.3	70.2	63.0	71.0
Unemployment rate	17.0	6.3	12.5	4.7
Participation rate	71.5	74.5	72.0	74.5
<b>Women</b>				
Aboriginal labour force	4.0	...	4.5	...
Employment rate	50.2	59.2	54.4	60.0
Unemployment rate	13.9	6.0	11.7	4.6
Participation rate	58.4	62.5	61.6	62.9
<b>Manitoba</b>				
Aboriginal labour force	7.3	...	8.5	...
Employment rate	55.2	65.2	59.2	65.9
Unemployment rate	14.2	4.2	10.1	4.3
Participation rate	64.4	68.1	65.8	68.9
<b>Saskatchewan</b>				
Aboriginal labour force	6.1	...	6.6	...
Employment rate	48.9	66.0	51.7	65.6
Unemployment rate	17.5	4.2	16.2	4.3
Participation rate	59.3	68.9	61.7	68.6
<b>Alberta</b>				
Aboriginal labour force	3.3	...	3.4	...
Employment rate	60.6	70.0	64.1	70.0
Unemployment rate	11.6	4.3	8.5	3.8
Participation rate	68.6	73.1	70.0	72.8
<b>British Columbia</b>				
Aboriginal labour force	2.7	...	3.0	...
Employment rate	51.4	60.1	56.1	62.0
Unemployment rate	19.1	7.4	15.0	5.6
Participation rate	63.5	64.9	66.0	65.6

Sources: Statistics Canada, Census of Population, 2001; Labour Force Survey, 2005

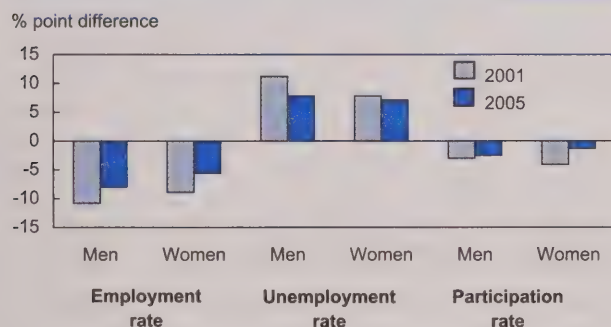
reserve have shown tremendous growth in university education attainment—60% more Aboriginal people now have university degrees (from 5% of all Aboriginal people in 2001 to 7% in 2005).<sup>4</sup> Consequently, the proportion of Aboriginal people with less than high school education also dropped, from 45% to 37% (Chart C). The proportion with a postsecondary certificate or diploma also dropped slightly for both Aboriginal and non-Aboriginal people.



**Chart A Employment growth of working-age Aboriginals and non-Aboriginals, 2001 to 2005**

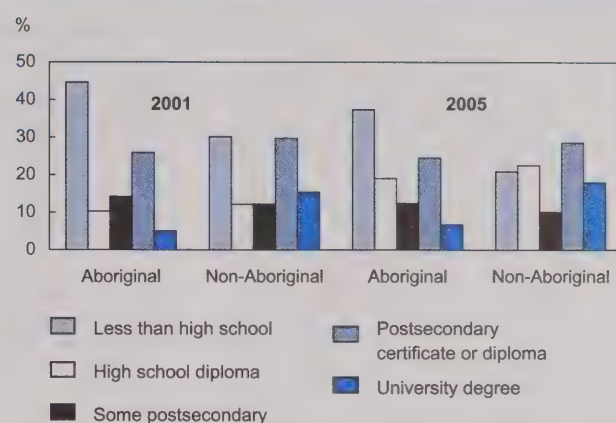
Sources: Statistics Canada, Census of Population, 2001; Labour Force Survey, 2005

High school non-completion rates for Aboriginal youth have been a major concern. A high school diploma is generally considered a minimum requirement for most jobs in today's economy. Since 1981, the gap in educational attainment between Aboriginal and non-Aboriginal people has narrowed. Between 2001 and 2005, the proportion of 20-to-24 year-old Aboriginal youth in Western Canada who had not finished high school dropped from 41% to 31% (Chart D). The share of non-Aboriginal youth without high school completion also decreased. The gap between the two youth populations continues to be high at 21

**Chart B Western Canada labour force gaps**

Note: Gaps refer to the difference between the percentage of Aboriginal and non-Aboriginal people.

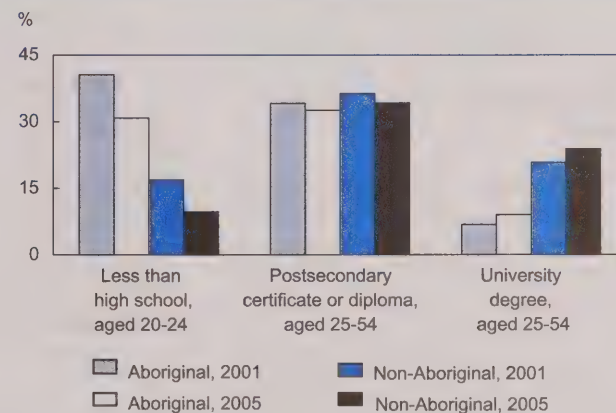
Sources: Statistics Canada, Census of Population, 2001; Labour Force Survey, 2005

**Chart C Education level distribution for Western Canada off-reserve Aboriginals and non-Aboriginals**

Note: Excludes full-time students.

Sources: Statistics Canada, Census of Population, 2001; Labour Force Survey, 2005

percentage points (24 points in 2001). On the other hand, among persons aged 25 to 54, the proportions with a postsecondary certificate or diploma were very similar for both Aboriginal and non-Aboriginal people.

**Chart D Educational attainment gap in Western Canada continues to narrow**

Sources: Statistics Canada, Census of Population, 2001; Labour Force Survey, 2005

## Postsecondary education beneficial

The likelihood of employment increases and the likelihood of unemployment decreases significantly with more education. This pattern can be illustrated with the off-reserve labour force data for Western Canada (Table 2). Among the least educated (no high school diploma), employment rates were very low in 2005 for both Aboriginal and non-Aboriginal populations (36% and 41% respectively). Among the very well-educated (university degree), Aboriginal employment rates surpassed those of the non-Aboriginal population in 2005—84% compared with 77%.<sup>5</sup>

The effect of postsecondary education on employment is particularly strong for Aboriginal women. With a university education, they had an employment rate 11 percentage points higher than non-Aboriginal women. For men, the difference was only 4 points. On the other hand, among those who did not complete postsecondary education, the gap was in the opposite direction for both women (-11 points) and men (-6 points), indicating the importance of educational credentials for Aboriginal workers. (Ciceri and Scott 2006 found a similar pattern.)

## Occupational distribution static

Even though off-reserve Aboriginal people in Western Canada had higher labour force participation and employment rates, and lower unemployment rates in 2005 than in 2001, their occupational profile changed very little (Table 3). Overall, the top three occupations in both years were sales and service (mainly retail sales clerks and cash-

**Table 2 Western Canada education levels, 2005**

	Employment rate	Unemployment rate	Employment gap <sup>1</sup>	
			2005	2001
<b>Both sexes</b>		%	% point	
<b>Aboriginal</b>				
Less than high school	36.3	21.2	-5.1	-7.0
High school diploma	70.2	9.3	1.8	-2.5
Some postsecondary	57.5	13.6	-8.5	-10.7
Postsecondary certificate or diploma	76.0	8.2	2.4	-2.4
University degree	84.1	3.9	7.6	-2.2
<b>Non-Aboriginal</b>				
Less than high school	41.4	8.6		
High school diploma	68.4	4.8		
Some postsecondary	66.0	5.2		
Postsecondary certificate or diploma	73.6	3.5		
University degree	76.5	3.5		
<b>Men</b>				
<b>Aboriginal</b>				
Less than high school	43.2	20.4	-6.9	-14.8
High school diploma	75.4	9.7	-0.6	-9.2
Some postsecondary	63.8	10.7 <sup>E</sup>	-5.7	-9.8
Postsecondary certificate or diploma	80.7	9.5	2.0	-2.5
University degree	82.3	F	3.8	2.1
<b>Non-Aboriginal</b>				
Less than high school	50.1	8.0		
High school diploma	76.0	5.0		
Some postsecondary	69.5	5.5		
Postsecondary certificate or diploma	78.7	3.4		
University degree	78.5	3.5		
<b>Women</b>				
<b>Aboriginal</b>				
Less than high school	30.0	22.1	-2.4	-9.1
High school diploma	65.5	9.0	4.2	-5.4
Some postsecondary	52.1	16.4	-10.5	-10.4
Postsecondary certificate or diploma	72.4	7.1	3.9	-1.5
University degree	85.2	F	10.8	3.1
<b>Non-Aboriginal</b>				
Less than high school	32.4	9.4		
High school diploma	61.3	4.6		
Some postsecondary	62.6	4.7		
Postsecondary certificate or diploma	68.5	3.7		
University degree	74.4	3.5		

1 Difference between Aboriginal and non-Aboriginal employment rates.

Sources: Statistics Canada, Census of Population, 2001; Labour Force Survey, 2005

iers, food and beverage occupations, protective service, and child care and home support); trades, transport and equipment operators (mainly mechanics, contractors, construction trade workers, and transportation



Note: Off-reserve Aboriginal people only.  
Sources: Statistics Canada, Census of Population, 2001; Labour Force Survey, 2005

## Data sources and definitions

The **Labour Force Survey (LFS)** collects monthly information on labour market activity from the civilian, non-institutionalized population 15 years of age and over. Residents of the territories are surveyed but the data are excluded from the national total. Persons living on Indian reserves are also excluded. The survey consists of a rotating panel sample of approximately 54,000 households, with each household remaining in the sample for six consecutive months. The LFS divides the working-age population into three mutually exclusive classifications: employed, unemployed, and not in the labour force. For a full listing and description of LFS variables, see *Guide to the Labour Force Survey* (Statistics Canada catalogue no. 71-543-GIE).

### Aboriginal identity

One of the greatest challenges is measuring the Aboriginal population. The 2001 Census identifies Aboriginal people in several ways:

- self-identification as an Aboriginal person (North American Indian, Métis or Inuit)
- Aboriginal ancestry—persons who reported at least one Aboriginal origin in the census question on ethnic origin.
- member of an Indian Band or First Nation (self-reported)
- Registered or Treaty Indian—persons who reported being registered under the *Indian Act* of Canada. Treaty Indians are registered under the *Indian Act* and can prove descent from a Band that signed a treaty.

In 1991 and previous censuses, Aboriginal persons were identified using the ethnic origin (ancestry) question. Beginning in August 2002, the LFS added two questions to allow Aboriginal people in Alberta living off-reserve to identify themselves. In April 2004, the questions were extended to British Columbia, Saskatchewan and Manitoba. The first question asked if the respondent was an Aboriginal person—that is, North American Indian, Métis or Inuit. If yes, a second question asked specifically to which group they belonged. Because of historical changes in the census to the ethnic origin and Aboriginal identity questions, this article focuses on the 2001 Census Aboriginal identity question, which is the same as in the 2005 Labour Force Survey. Self-identification is now used more often to define affiliation with an Aboriginal group (Guimond 2003).

**Labour force:** Persons 15 years of age and over who were employed or unemployed during the survey reference week.

**Participation rate:** Labour force expressed as a percentage of the population. The participation rate for a particular group is the labour force in that group expressed as a percentage of the population for that group.

**Employment rate:** The percentage of the population employed.

**Occupational classification and skill level:** The National Occupational Classification comprises more than 500 occupations. The Essential Skills Research Project, carried out by Human Resources and Skills Development Canada, estimated the skill level of each occupation. The assigned code reflects both the education level usually required in the labour market and some criteria covering experience, specific training, and responsibility related to health and safety (as in the case of police officers and nurses). The skill levels are university degree; a college diploma or certificate, or apprenticeship training; no more than a high school diploma.

Managers are treated separately, given the diversity of their experience and education. The skill levels attributed to occupations date from the early 1990s, so levels for some occupations may differ slightly in 2001 or 2005. For example, occupations requiring a college diploma or certificate in 1991 may have required a university degree in 2001 or 2005. Similarly, occupations previously requiring high school graduation may now require a college diploma.

### Differences between the census and the Labour Force Survey

In the census, the labour force refers to persons aged 15 and over who were either employed or unemployed during the week prior to Census Day (May 15, 2001). In the LFS, information is collected for the week containing the 15<sup>th</sup> day of the month.

Both the census and the LFS use the National Occupational Classification for Statistics 2001 coding system. However, the census is a self-completed survey whereas the LFS is conducted using trained interviewers who understand the occupational descriptions and can probe for further information. For more information, see Statistics Canada (2002).

may not be accessible to them. Indeed, they are under-represented in occupations normally requiring a university education and over-represented in occupations requiring a high school diploma or less. Disparity has widened among the latter group since 2001.

Although Aboriginal numbers are increasing at universities, most of those taking postsecondary education do so at the college or trade level. According to the National Graduates Survey, Aboriginal people accounted for 17% of Manitoba's college-level gradu-

ates in 2000, but only 9% at the bachelor's level (Vaillancourt 2005). The proportion of graduates at the college level roughly reflected the proportion of Aboriginal people in the general Manitoban population, while they were under-represented at the bachelor's level. Aboriginal graduates also tended to choose different fields of study—health, parks, recreation and fitness—while their non-Aboriginal counterparts tended to choose engineering technologies. This survey also found that Aboriginal college graduates were



**Table 4 Western Canada, 20 to 24 year-olds**

	2001		2005	
	Aborig- inal	Non- Aboriginal	Aborig- inal	Non- Aboriginal
	'000			
Population	34	543	39	652
Labour force	24	448	28	517
Employment	19	401	24	483
Unemployment	5	47	4	34
<b>Both sexes</b>	%			
Participation rate	68.7	80.1	72.8	79.3
Employment rate	56.2	73.6	62.2	74.1
Unemployment rate	18.2	6.2	14.5	6.6
<b>Men</b>				
Participation rate	79.2	82.4	82.2	81.4
Employment rate	63.8	75.0	69.0	75.3
Unemployment rate	19.5	9.1	16.1 <sup>E</sup>	7.5
<b>Women</b>				
Participation rate	59.8	77.7	64.5	77.2
Employment rate	49.7	72.1	56.3	72.8
Unemployment rate	16.8	7.1	F	5.7
<b>Education</b>				
<b>Both sexes</b>				
Less than high school	40.4	16.9	28.5	9.7
High school diploma	17.0	16.1	30.6	31.6
<b>Men</b>				
Less than high school	43.2	19.6	25.9	11.7
High school diploma	18.7	18.4	35.2	33.6
<b>Women</b>				
Less than high school	38.1	13.9	30.8	7.7
High school diploma	15.6	13.8	26.6	29.6

Note: Off-reserve Aboriginal people only.

Sources: Statistics Canada, Census of Population, 2001; Labour Force Survey, 2005

employment growth in Canada between 1991 and 2001, much of Western Canada's job growth in subsequent years has been in occupations normally requiring a college diploma or certificate, or apprenticeship training. Western Canada added 283,000 such jobs between 2001 and 2005, accounting for just over 60% of job growth. Aboriginal people accounted for about 15,000 of these positions—46% of their total job growth during these years. Indeed, about one-third of both Aboriginal and non-Aboriginal people in 2005 were in jobs requiring college education or apprenticeship training. This category includes police officers, firefighters, trade professions, as well as registered nursing assistants.

In Alberta, the need for skilled workers is so critical that the provincial government is promoting the trades, particularly among Aboriginal youth (Jacobs 2006). According to the Alberta government, some 1,100 Aboriginal people (on- and off-reserve) were apprentices in 2006, up dramatically from 200 four years ago. The

less likely to be employed (80% had a job two years later compared with 90% of non-Aboriginal college graduates), and that compared with counterparts outside Manitoba, their earnings were lower. Aboriginal graduates also tended to be less likely to enter their program directly from secondary school. Accordingly, they tended to be older and, at the bachelor's level, less likely to be single and more likely to have children.

Although occupations normally requiring a university education accounted for almost half of total

**Table 5 Western Canada jobs by skill level**

	2001		2005	
	Aborig- inal	Non- Aboriginal	Aborig- inal	Non- Aboriginal
	'000			
<b>Total</b>	<b>173</b>	<b>4,519</b>	<b>206</b>	<b>4,953</b>
Managerial level	11	472	11	419
University degree	15	678	21	796
College diploma or certificate or apprenticeship	53	1,437	68	1,705
High school diploma or less	95	1,932	106	2,034

Note: For a discussion of skill levels, see *Data source and definitions*.

Sources: Statistics Canada, Census of Population, 2001; Labour Force Survey, 2005

Construction Sector Council and the Aboriginal Human Resource Development Council of Canada are also forecasting shortages. Since more than 62,000 construction workers across Canada are expected to retire within the next 10 years, the shortage could represent a major opportunity for Aboriginal youth, irrespective of where they live.

### Summary

Historically, Aboriginal people have not fared well in the labour market as lower educational attainment has channelled them into less skilled jobs. They also have higher unemployment rates. Labour force indicators from 2001 show that living in more remote locations has been a factor—Aboriginal people living on reserves had an unemployment rate of 27% in 2001, nearly four times that of Canada as a whole.

The good news is that Aboriginal people are starting to benefit from the increasingly tighter labour market conditions, particularly in Alberta and British Columbia. In fact, labour-force participation rates for Aboriginal people living off-reserve surpassed those of the non-Aboriginal population in both Calgary and Vancouver in 2005. Employment among Aboriginal people in the West rose 23% between 2001 and 2005, versus only 11% among non-Aboriginals. In addition, their unemployment rate dropped 3 percentage points, the improvement in education levels likely being an important factor. In fact, while only 7% of working-age Aboriginal people had a university degree, those that did were even more likely than non-Aboriginals to hold a job in 2005 (84% versus 77%).

The proportion of Aboriginal people living off-reserve in Western Canada who work in occupations requiring college, trade or apprenticeship training (such as trades and construction) has grown over the last few years. Such skills, particularly in the primary industries, can be easily applied anywhere in Canada, and as such may be one of the keys to employment mobility, particularly for more remote areas. With on-reserve populations expected to increase and housing shortages forecast, the establishment of trade education programs in these locations could be particularly relevant. Nevertheless, in 2005, one-third of the Aboriginal labour force in Western Canada was employed in occupations requiring only a high school education.

The evidence concerning Aboriginal people's labour market outcomes in Western Canada shows that progress is being made. Nevertheless, substantial gaps remain between the Aboriginal and non-Aboriginal populations. For example, young Aboriginal women (20 to 24) who live off-reserve continue to have lower rates of labour force participation and high school completion than their non-Aboriginal counterparts. Secondly, the employment gap remains high in cities such as Regina and Saskatoon, which are home to a large portion of the Aboriginal population. In spite of these challenges, current trends seem to signal improvement in the labour market performance of Aboriginal people.

---

### Perspectives



## APPENDIX

**Table A1 Aboriginal population 15 and older**

In 2001, the majority of the Aboriginal population lived in Western Canada (61%) while 20% lived in Ontario.

Provincially, Manitoba had the largest share of Aboriginal people (11%); Nunavut led the territories (80%).

Yukon had the largest share of North American Indians (85%); not surprisingly, Nunavut had the highest percentage of Inuit.

Alberta had the largest share of Métis (45%).

	Total population <sup>1</sup>	Aboriginal identity
		'000
<b>Canada</b>	<b>23,901</b>	<b>652</b>
<b>Atlantic</b>	<b>1,847</b>	<b>38</b>
Newfoundland and Labrador	419	14
Prince Edward Island	107	1
Nova Scotia	732	12
New Brunswick	589	12
Quebec	5,832	56
Ontario	9,048	133
<b>Western Canada</b>	<b>7,107</b>	<b>395</b>
Manitoba	869	96
Saskatchewan	756	79
Alberta	2,322	103
British Columbia	3,160	118
Northwest Territories	27	12
Yukon	22	5
Nunavut	17	13

<sup>1</sup> Includes the Aboriginal groups (North American Indian, Métis and Inuit) and multiple Aboriginal responses.

Source: Statistics Canada, Census of Population, 2001

**Table A2 Area of residence**

Twenty-eight percent of Aboriginal people lived on reserves in 2001.

	On reserve	Off-reserve	
		Rural	Urban
		%	
<b>Age 15 and over</b>	<b>27.8</b>	<b>20.3</b>	<b>52.0</b>
15 to 24	29.3	18.9	51.8
25 to 54	26.5	19.9	53.6
55 and over	30.5	24.1	45.5

Source: Statistics Canada, Census of Population, 2001

**Table A3 Population by age**

The Aboriginal age distribution is considerably younger than the non-Aboriginal.

Thirteen percent of the non-Aboriginal population was 65 and over compared with only 4% of the Aboriginal population.

In contrast, one-third of the Aboriginal population was under 15 compared with only one-fifth of the non-Aboriginal population.

	Aboriginal	Non-Aboriginal
		'000
<b>All ages</b>	<b>976</b>	<b>28,663</b>
0 to 4	103	1,599
5 to 9	113	1,868
10 to 14	108	1,947
15 to 19	93	1,951
20 to 24	76	1,868
25 to 34	149	3,825
35 to 44	146	4,928
45 to 54	96	4,297
55 to 64	53	2,795
65 and over	40	3,585

Source: Statistics Canada, Census of Population, 2001

**Table A4 Top 10 Aboriginal occupations**

The most common occupational category for Aboriginal men in 2001 was construction trades—7.4% compared with only 4.1% of non-Aboriginal men. Such jobs include plumbers, carpenters, painters, and shinglers. Just under one-third of Aboriginal men in these occupations lived on-reserve and were younger (37) than their non-Aboriginal counterparts (40).

The most common occupations for Aboriginal men on-reserve in 2001 were in the forestry, mining, fishing, and oil and gas extraction industries. Such jobs include logging machinery operators, oil and gas drillers, and trappers and hunters.

The most common occupations among Aboriginal women in 2001 were clerical, which include general office clerks, data entry clerks, library clerks, letter carriers, and bank and financial clerks. Although 13.4% of Aboriginal women were found in these occupations, slightly more non-Aboriginal women had jobs in this area (14.7%).

The most common occupations among Aboriginal women living on-reserve in 2001 were in child care and home support. Aboriginal women on-reserve were also highly likely to be secondary or elementary teachers or counsellors.

	Aboriginal		Non-Aboriginal	
	Average age	%	Average age	%
<b>Men</b>	<b>36</b>	<b>100.0</b>	<b>40</b>	<b>100.0</b>
Construction trades	37	7.4	40	4.1
Trades helpers, construction and transportation labourers and related	33	6.9	36	3.5
Motor vehicle and transit drivers	40	6.4	42	5.2
Forestry, mining, oil and gas extraction and fishing, excluding labourers	37	5.7	40	1.4
Cleaners	37	4.6	40	2.7
Other sales and service occupations	24	3.9	27	3.3
Protective services	36	3.7	39	2.4
Mechanics	38	3.6	40	2.6
Primary production labourers	32	3.5	33	1.3
Clerical occupations	34	3.4	37	4.9
<b>Women</b>	<b>36</b>	<b>100.0</b>	<b>39</b>	<b>100.0</b>
Clerical occupations	35	13.4	39	14.7
Salespersons and cashiers	30	7.6	32	8.2
Paralegals, social service workers and occupations in education and religion	36	6.5	37	3.4
Childcare and home support	37	6.2	40	3.3
Cleaners	39	6.0	42	2.6
Other sales and service occupations	30	5.3	32	4.3
Secretaries	37	4.0	43	5.0
Food and beverage service	28	3.9	29	2.9
Secondary and elementary school teachers and educational counsellors	40	3.8	42	4.1
Assisting occupations in support of health services	39	2.8	39	2.5

Source: Statistics Canada, Census of Population, 2001

Research has shown that many people on reserves would prefer to have a job close to home rather than a better job somewhere else (EKOS 2004). Although Aboriginal youth were more likely to prefer the best job available, those aged 25 to 44 had the greatest preference for staying close to home, as did those who had a college level education. Indeed, the emotional support of family was considered an important factor in the choice of employment, a sentiment that increased with age and education.



**Table A5 Top 10 occupations, 15 to 24 year-olds**

The most common occupations for Aboriginal youth were in sales and service, accounting for almost 1 in 4 jobs held by this group. Other common jobs were clerical, trades and cleaners. Non-Aboriginal youth showed a similar pattern.

Among Aboriginal youth on-reserve, jobs in child care and home support as well as education and social services were also prominent.

Sales and service jobs were common among Aboriginal youth of both sexes. Trades, labourer, and primary industry-related occupations were more common among young men, with the latter being particularly important for those on-reserve. Clerical, child care and home support, education and social service, and secretarial jobs were more popular among young Aboriginal women, with the latter three areas being relatively more plentiful among those on-reserve.

	Aboriginal	Non-Aboriginal
	%	
<b>Both sexes</b>	<b>100.0</b>	<b>100.0</b>
Other sales and service	13.0	13.0
Salespersons and cashiers	11.1	15.5
Clerical occupations	8.0	10.4
Trades helpers, construction and transportation labourers and related	5.6	3.5
Food and beverage service	5.5	5.3
Cleaners	4.7	2.9
Primary production labourers	3.9	2.2
Childcare and home support	3.5	1.9
Paralegals, social service workers and occupations in education and religion	3.4	1.8
Chefs and cooks	3.1	2.8
<b>Men</b>	<b>100.0</b>	<b>100.0</b>
Other sales and service	12.9	14.4
Trades helpers, construction and transportation labourers and related	9.6	6.3
Primary production labourers	6.3	3.5
Salespersons and cashiers	5.0	9.0
Construction trades	5.0	3.0
Cleaners	4.8	3.7
Clerical occupations	4.7	7.5
Labourers in manufacturing and utilities	4.4	3.6
Forestry, mining, oil and gas extraction and fishing, excluding labourers	4.4	1.0
Chefs and cooks	3.8	3.9
<b>Women</b>	<b>100.0</b>	<b>100.0</b>
Salespersons and cashiers	17.9	22.4
Other sales and service	13.1	11.5
Clerical occupations	11.7	13.4
Food and beverage service	9.9	8.5
Childcare and home support	6.1	3.3
Paralegals, social services workers and occupations in education and religion	5.7	3.2
Cleaners	4.5	2.0
Secretaries	2.4	2.1
Chefs and cooks	2.3	1.7
Travel and accommodation (including casino occupations)	1.9	1.6

Source: Statistics Canada, Census of Population, 2001

**Table A6 Hourly earnings of employees**

Aboriginal employees earned less on average than their non-Aboriginal counterparts (\$14.20 versus \$15.50 per hour).

These average hourly earnings mask important distributional differences. For example, 1 in 4 Aboriginal employees earned less than \$10 per hour, compared with only 1 in 6 non-Aboriginal employees.

	Aboriginal			Non-Aboriginal		
	Both sexes	Men	Women	Both sexes	Men	Women
<b>Overall</b>	<b>14.20</b>	<b>14.80</b>	<b>13.60</b>	<b>15.50</b>	<b>16.10</b>	<b>14.80</b>
	\$			%		
\$0.01 to \$9.99	24.8	20.7	28.6			
\$10.00 to \$15.99	32.8	30.6	34.8			
\$16.00 to \$19.99	13.8	13.6	14.0			
\$20.00 and over	28.6	35.1	22.6			

Source: Statistics Canada, Labour Force Survey, 2005

Only 29% of Aboriginal employees earned \$20 or more per hour, compared with 40% of non-Aboriginal employees.

**Table A7 Labour market rates by province, age and sex**

	Participation rate			Employment rate			Unemployment rate		
	Aboriginal		Other	Aboriginal		Other	Aboriginal		Other
	Off-reserve	On-reserve		Off-reserve	On-reserve		Off-reserve	On-reserve	
<b>Province or territory</b>				%					
<b>Canada</b>	<b>64.1</b>	<b>51.4</b>	<b>66.1</b>	<b>54.2</b>	<b>37.7</b>	<b>61.8</b>	<b>15.4</b>	<b>26.6</b>	6.5
Newfoundland and Labrador	58.2	F	56.4	40.0	44.0	45.2	31.3	42.6	19.8
Prince Edward Island	63.5	F	68.3	49.3	45.3	60.0	22.3	F	12.1
Nova Scotia	64.4	51.9	60.9	54.1	37.0	55.1	16.0	28.6	9.7
New Brunswick	64.6	53.7	62.5	50.2	33.0	55.4	22.2	38.5	11.3
Quebec	60.0	52.9	63.8	50.9	40.8	59.0	15.1	23.0	7.6
Ontario	65.4	57.3	66.9	57.6	45.2	63.3	11.9	21.1	5.4
Manitoba	64.4	46.0	68.1	55.2	32.3	65.2	14.2	29.7	4.2
Saskatchewan	59.3	42.8	68.9	48.9	29.2	66.0	17.5	31.8	4.2
Alberta	68.6	45.5	73.1	60.6	33.5	70.0	11.6	26.4	4.3
British Columbia	63.5	57.6	64.9	51.4	41.6	60.1	19.1	27.7	7.4
Yukon	71.1	68.8	81.2	54.4	48.4	75.3	23.4	29.7	7.3
Northwest Territories	69.3	62.6	87.2	59.7	50.7	84.3	13.8	19.0	3.5
Nunavut	61.1	...	93.2	47.6	...	90.6	22.1	...	2.8
<b>Sex</b>									
Men	70.4	55.8	72.4	58.5	38.0	67.6	16.9	31.8	6.7
Women	58.6	47.0	60.1	50.5	37.4	56.4	13.8	20.4	6.3
<b>Age</b>									
<b>Both sexes</b>									
15 to 24	54.6	31.8	63.6	43.2	19.5	56.8	20.9	38.6	10.7
25 to 54	75.5	67.3	85.1	65.0	50.7	80.3	13.9	24.7	5.7
<b>Men</b>									
15 to 24	58.1	34.6	64.4	45.2	19.9	56.9	22.2	42.5	11.6
25 to 54	83.1	72.4	90.9	70.3	50.5	85.7	15.4	30.3	5.7
<b>Women</b>									
15 to 24	51.4	28.8	62.8	41.3	19.1	56.6	19.6	33.7	9.9
25 to 54	69.0	62.2	79.5	60.5	50.9	75.0	12.4	18.2	5.6

Source: Statistics Canada, Census of Population, 2001

In 2001, Aboriginal people made up about 2.7% of Canada's population and about 2.5% of the labour force.

Aboriginal participation and employment rates (60.6% and 49.7% respectively) fell short of the non-Aboriginal rates (66.1% and 61.8%), and their unemployment rate was much higher (18.0% versus 6.5%).

In Manitoba and Saskatchewan, the provinces with the highest percentages of Aboriginal people, Aboriginal unemployment rates were 18.2% and 21.6% respectively. These were over four times the non-Aboriginal rates.

Aboriginal unemployment rates were high in the Atlantic provinces (where the proportion of Aboriginal people is lower), ranging from 20.4% in Nova Scotia to 31.9% in Newfoundland and Labrador.

Despite the greater likelihood of Aboriginal people being unemployed in Atlantic Canada, their labour force participation was on a par with non-Aboriginals, and in some cases higher.

In contrast, some provinces and territories such as Saskatchewan and Nunavut had a high level of Aboriginal unemployment, as well as a low labour force participation.

Aboriginal men had the highest unemployment rate in 2001, at 20.6%. This was higher than the rate for Aboriginal women (15.3%) and three times the rate of non-Aboriginal men (6.7%).

Aboriginal women, while faring better than Aboriginal men, still faced an unemployment rate more than twice that of non-Aboriginal women (6.3%).



Young Aboriginal men (15 to 24) had a particularly difficult time finding work; their unemployment rate was 26.3% in 2001. Although youth traditionally have higher unemployment rates than the core working-age population, this rate was more than twice that of young non-Aboriginal men.

Young Aboriginal women also faced higher unemployment than their non-Aboriginal counterparts—22.2% versus 9.9%.

The employment rate was only 37.7% among the on-reserve Aboriginal population—almost the same as in the 1996 Census. More than one-quarter of the Aboriginal population 15 and over lived on reserves in 2001, and this is expected to grow to 40% by 2017 (Statistics Canada 2005).

Although population growth was strong among working-age Aboriginal people, both on- and off-reserve, employment increased more rapidly among those living off-reserve. Those on-reserve may be disadvantaged in terms of employment prospects, given remote locations and limited access to education, training, job market information, and child care (EKOS 2004). Indeed, more than half had not completed high school in 2001, compared with 44% living off-reserve and 31% of non-Aboriginals.

Aboriginals living on-reserve experienced higher unemployment—about 1 in 4 of those in the labour force in 2001. The rate for Aboriginal people living off-reserve was much lower at 15.4%, but still more than twice the non-Aboriginal rate (6.5%).

### Perspectives

#### ■ Notes

1 In 2001, Aboriginal people living off-reserve in Western Canada accounted for 43% of the total Aboriginal population in Canada and 70% of the Aboriginal population in the West.

2 In 2005, Aboriginal people made up 8% of the labour force in Manitoba, 7% in Saskatchewan, and about 3% in Alberta and in British Columbia.

3 Alberta is in the midst of the strongest period of economic growth ever recorded by any province in Canada's history. Its total GDP rose 43% between 2002 and 2005 and showed no signs of slowing down in 2006. Most of this increase reflects the soaring price of oil and gas exports, which have led to expanded business investment in pipelines as well as non-residential (office buildings, petrochemical plants) and residential construction (Cross and Bowlby 2006).

4 In absolute terms, the off-reserve Aboriginal population with a university degree in Western Canada grew from 14,000 to 22,000.

5 For the 25-to-54 core working-age group, the employment rate of university-educated Aboriginal workers still surpassed that of their non-Aboriginal counterparts, although the difference was considerably smaller (89% versus 86%).

6 Full-time students looking for full-time work were removed from the unemployed category. The census and the LFS treat students in the labour force differently. The census removes only high school students from the unemployment

category, whereas the LFS removes both full-time high school and university students looking for work.

#### ■ References

Ciceri, Coryse and Katherine Scott. 2006. *The Determinants of Employment Among Aboriginal Peoples*. Paper submitted to the Policy and Research Coordination Directorate, Strategic Policy and Planning Branch, Human Resources and Social Development Canada. 53 p.

Consulbec. 2002. *Connecting the Dots: A Study of Perceptions, Expectations and Career Choices of Aboriginal Youth*. Prepared for the Aboriginal Human Resources Development Council of Canada.

Cross, Philip and Geoff Bowlby. 2006. "The Alberta economic juggernaut: The boom on the rise." *Canadian Economic Observer*. Vol. 19, no. 9. September. Statistics Canada Catalogue no. 11-010-XIB. <http://www.statcan.ca/english/freepub/11-010-XIB/00906/feature.htm> (accessed January 10, 2007).

EKOS Research Associates. 2004. *Fall 2003 Survey of First Nations People Living On-reserve*. Final report. Prepared for Indian and Northern Affairs Canada. Ottawa. 78 p.

Guimond, Eric. 2003. "Fuzzy definitions and population explosion: Changing identities of Aboriginal groups in Canada." In *Not Strangers in These Parts: Urban Aboriginal Peoples*. David Newhouse and Evelyn Peters (eds.). Policy Research Initiative. p. 35-49.

Jacobs, Mindelle. 2006. "Poor education has domino effect." *Edmonton Sun*. March 2, 2006.

Statistics Canada. 2002. *2001 Census Dictionary*. Statistics Canada Catalogue no. 92-378-XIE.

<http://www12.statcan.ca/english/census01/Products/Reference/dict/index.htm> (accessed January 16, 2007).

---. 2005. *Projections of the Aboriginal populations, Canada, provinces and territories, 2001 to 2017*. Statistics Canada Catalogue no. 91-547-XIE.

<http://www.statcan.ca/english/freepub/91-547-XIE/91-547-XIE2005001.htm> (accessed January 10, 2007).

Vaillancourt, Chantal. 2005. *Manitoba Postsecondary Graduates from the Class of 2000: How Did They Fare?* Statistics Canada Catalogue no. 81-595-MIE. 74 p.

<http://www.statcan.ca/english/research/81-595-MIE/81-595-MIE2005029.pdf> (accessed January 10, 2007).

White, P., M. Michalowski and P. Cross. 2006. "The west coast boom." *Canadian Economic Observer*. Vol. 19, no. 5. May. Statistics Canada Catalogue no. 11-010-XIB. <http://www.statcan.ca/english/freepub/11-010-XIB/00506/feature.htm> (accessed January 10, 2007).

### Back Issues: *Did you miss something?*

*Don't worry!* Back issues of **Perspectives on Labour and Income** are available.

Feature articles in these issues include:

- |                    |   |
|--------------------|---|
| <b>Winter 2006</b> | The core-age labour force • Earnings instability • Training through the ages • Balancing career and care<br>• Measuring housing affordability • Varia: <i>Minimum wage</i> • Cumulative index 1989-2006   |
| <b>Autumn 2006</b> | Converging gender roles • Wives as primary breadwinners • Education and earnings • Is the workplace becoming safer? • The GST credit • Increased work stoppages • Fact-sheets: <i>Unionization, Gambling</i>  |
| <b>Summer 2006</b> | Does it pay to go back to school? • Who gets student loans? • Cracking the RRSP nest egg • On sick leave • Screening job applicants • Unemployment since 1971 • Varia: <i>Work absences, Retirement</i>   |
| <b>Spring 2006</b> | Education and income of lone parents • Shifts in spending patterns of older Canadians • Recent changes in employment by industry • On the road again • Aging, health and work • Disability in the workplace • Fact sheets: <i>The labour market in 2005, Trusteed pension plans</i> |

For more information, contact **Statistics Canada, Dissemination Division, Circulation Management, 100 Tunney's Pasture Driveway, Ottawa, Ontario K1A 0T6**. Or, call toll free **1 800 267-6677**.

### Perspectives on Labour and Income

*The quarterly for labour market and income information*



# Young pensioners

*Ted Wannell*

**T**wo separate and irreconcilable views of the coming wave of baby-boom retirements seem to have emerged. One is the vision of marketers of financial products: young retirees, free of workplace shackles, strolling barefoot along a southern beach or listening to the loons from the deck of a dream cottage. From this perspective, early retirement is the reward for hard work and good planning.

The competing vision is darker: labour shortages left in the wake of retiring boomers and pressure on the government purse as they draw public pensions and become more intensive users of the health care system. Commentators who focus on these issues favour longer careers in general and fewer disincentives for seniors to work.

However, the private dream does not have to be the public policy nightmare. Recent research has shown that retirement is not an all-or-nothing proposition. Many people return to the workforce or never leave after retiring from long-term jobs (see, for example, Pyper and Giles 2002; Schellenberg, Turcotte and Ram 2005; Statistics Canada 2006a). And only a minority of recent retirees state outright that they would not continue working under any circumstances (Schellenberg and Silver 2004). Health and personal or family responsibilities are the most frequently mentioned reasons for retirement (Statistics Canada 2006b), indicating that a return to work is often possible if conditions change.

Although previous studies have yielded important insights into the retirement process, they share the common constraint of being based on general population surveys. Although the transition to retirement may be a prolonged process for an individual, the actual event of retiring from a job is a relatively rare

occurrence given the numbers employed. Accordingly, relatively few such events are observed in sample surveys. Following respondents over a period of time or asking retrospective questions increases the number of retirement observations, but accurately estimating patterns of post-retirement employment remains a challenge (Pyper and Giles 2002).

This study uses a large sample of taxfilers to address the issue of post-retirement employment (see *Data source and definitions*). The sample size enables the calculation of rates and trends for relatively rare events, such as retirement. The file lacks direct measures on the retirement process, so inferences are required based on the available information. However, patterns relating to the receipt of various types of retirement income are clear enough to provide intuitive markers of retirement behaviour. The file's real shortcoming is the much narrower range of personal characteristics (age, sex and marital status) with which to classify the results. As such, this study is very much a complement to survey-based studies.

The focus is relatively narrow: those who begin receiving private pension income before their 60<sup>th</sup> birthday—roughly one-fifth of taxfilers. These individuals represent the greatest potential loss of labour supply to the economy. Since they are generally not yet eligible for public pensions and can expect a relatively long life span, they should also be more likely than older retirees to seek re-employment.

This article looks at the trends in pension uptake and post-pension employment over the 1990s and early 2000s. Following individuals over time allows for observation of pre- and post-pension income, enabling the calculation of income replacement rates.

The findings generally accord with survey results showing a recent upturn in the median retirement age, an increase in the participation rate of older workers, and a falling-off in pension plan coverage. Re-employment patterns, income replacement rates, and the measurement of pension coverage are noted.

---

*Ted Wannell is with the Labour and Household Surveys Analysis Division. He can be reached at 613-951-3546 or [ted.wannell@statcan.ca](mailto:ted.wannell@statcan.ca).*

## Data source and definitions

Retirement is not straightforward to measure. The transition can take many paths (Pyper and Giles 2002; Statistics Canada 2006a; Bowlby 2007). Many do not lead to an immediate cessation of all work, instead involving some reduction in working hours and a weaker attachment to the labour force. The potential loss of working hours to the economy is obviously greater the younger the age at which the transition begins.

While individuals become eligible for public pensions in their 60s (as early as 60 for C/QPP and 65 for OAS and GIS), many employer-sponsored registered pension plans (RPPs) provide substantial retirement benefits for long-serving workers in their 50s. The magic number of 85 (age combined with years of service) signals the availability of unreduced pension benefits in many public-sector plans. Some employees may also choose to retire before they 'hit their numbers' if they are dissatisfied with their work or have other employment opportunities. Furthermore, some employers use special retirement incentives or reduced penalties to shrink their workforce in economic downturns. All these factors contribute to the receipt of RPP income before the age of 60.

This study uses the **Longitudinal Administrative Database (LAD)** to identify taxfilers who began collecting RPP benefits in their 50s. The LAD is based on a 20% sample of T1 tax records, which at the time of analysis covered a 22-year period ending in 2004. Each year's data are used to ascertain current family structure.

The LAD variable 'pension and superannuation income' combines RPP income with registered retirement income fund (RRIF) income, but the latter should be inconsequential before the age of 70.<sup>1</sup> The variable is used to define early pensioners under the following conditions:

- Initial receipt begins between the ages of 50 and 59.
- The recipient had positive employment or self-employment income in the year preceding initial receipt, indicating a transition from work.
- The recipient did not claim the disability deduction in the first two years of receipt, which would indicate difficulties in pursuing post-retirement employment.
- The recipient did not receive C/QPP benefits in the first two years of receipt since this may also be an indicator of disability.<sup>2</sup>
- Pension and superannuation income did not drop to zero in the year following initial receipt. This eliminates individuals who change employers and are unable to transfer all previous RPP assets to the new employer's plan or an RRSP.

Each of the cohorts in this study covers three years. The first year identifies a set of workers with positive earnings and no pension. The second marks a transition year for those who began collecting a pension. The third year provides an earnings and income comparison with the first year, which should be relatively free of partial-year effects common to transition years. Note that the non-pension comparison group contains some individuals who began receiving pensions in the third year. The cohorts are 1989 to 1991, 1994 to 1996, 1999 to 2001, and 2002 to 2004.

A **registered pension plan (RPP)** is sponsored by an employer or union and is usually funded through both employee and employer contributions. RPPs must satisfy certain conditions and be registered for the purposes of the federal *Income Tax Act*. Contributions to RPPs are tax-deductible, the investment income in them is tax-deferred, and payments from them are taxable.

A **registered retirement savings plan (RRSP)** is set up by an individual, including the self-employed, and is registered for the purposes of the federal *Income Tax Act*. Contribution limits are based on earned income. RRSPs provide retirement income based on accumulated contributions and return on investment in the plan. Contributions to an RRSP are tax-deductible, the investment income in it is tax-deferred, and payments from it are taxable.

A **registered retirement income fund (RRIF)** is for individuals, established at a financial institution, and registered under the *Income Tax Act* to provide income in retirement. RRIFs are set up by directly transferring monies from RRSPs or lump-sum payments from RPPs. Amounts withdrawn from RRIFs are taxable. A minimum amount must be withdrawn each year, beginning in the year after the RRIF is established.

The **Canada and Quebec Pension Plans (C/QPP)** are contributory, earnings-related social insurance programs that ensure a measure of income protection to contributors and their families against loss of income due to retirement, disability or death. The CPP operates in all provinces and territories except Quebec, where the similar QPP is in effect.

**Old Age Security (OAS)** is a taxable monthly payment to people age 65 and older based on years of residency in Canada. The **Guaranteed Income Supplement (GIS)** is a non-taxable benefit paid to lower-income OAS recipients. Both benefits are income-tested and can be clawed back as income increases.

## Early pension uptake peaked in the mid-1990s

Early pension uptake depends on two factors: having RPP assets (the pension plan coverage rate) and the decision to convert those assets into a stream of pen-

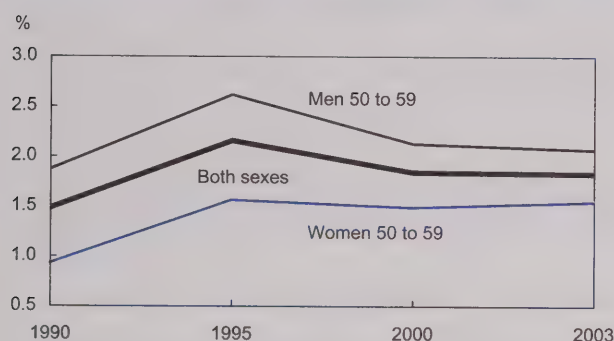
sion income. This would most often coincide with retirement from a long-term job, but could also be based on a decision to commence deferred pension payments from an earlier job. At the individual level,



deciding to take a pension is complicated with many variables to consider. However, at the aggregate level, some clear trends are evident.

The pension take-up rate increased sharply from 1.5% in 1990 to 2.2% in 1995, before falling back to 1.8% per year in 2000 and 2003 (Chart A). Estimates of pension plan coverage based on the LAD (see *An alternative measure of pension coverage*) suggest that coverage may have peaked in the mid 1990s, indicating that coverage is at least part of the story. However, deficit-fighting in the public sector and downsizing in the private sector at that time led many large organizations to offer early retirement incentives in the form of lump sum payments or reduced early retirement penalties. These measures also played a role in the mid-1990s peak in early retirement.

**Chart A Downsizing in the mid-1990s bumped up early pension take-up rates**



Source: Statistics Canada, Longitudinal Administrative Database

The trend for men closely paralleled the overall. For women, whose coverage is lower than men's, the 2003 rate was equivalent to the 1995 rate, indicating a convergence of pension coverage rates for men and women.

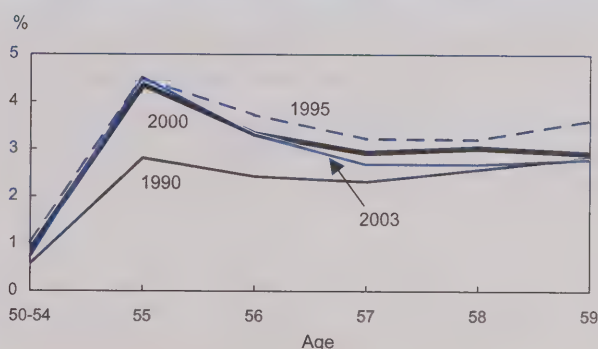
### Early pension uptake peaks at age 55

Many public-sector pension plans allow employees to retire without benefit penalties at age 55 given minimum tenure requirements—typically 30 years of service.<sup>3</sup> Early retirement penalties result in very low uptake rates for those under age 55, averaging less than 1% per year in each period except 1995 (Chart B). At age

55, take-up rates spike as those most disposed to retirement 'hit their numbers'. The rate dips for ages 56 to 59 and does not surpass the age 55 peak until age 60 is reached.

The take-up rate increased at all ages between 1990 and 1995, highlighted by a large absolute jump at age 55. Among all taxfilers, the age 55 take-up rate remained within a tenth of a percentage point of that peak over the eight subsequent years while dropping back at all other ages. However, the overall stability of the age 55 spike masks a tailing-off of the rate for men—from 5.4% in 1995 to 5.0% in 2003—and an increasing propensity for women to retire at 55—from 3.3% to 4.0% (data not shown).

**Chart B Early pension take-up peaks at age 55, in line with common eligibility criteria**



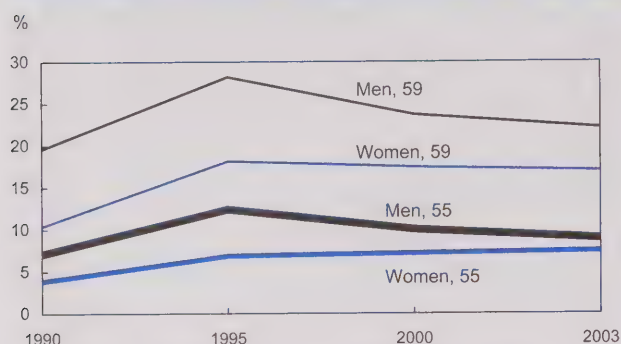
Source: Statistics Canada, Longitudinal Administrative Database

### Cumulative rates highlight differing trends for men and women

Pension take-up rates can also be summarized by calculating the percentage of a hypothetical population that would retire by a certain age given the age-specific rates in any period. This is equivalent to the standard method used to calculate life expectancy (see *An alternative measure of pension coverage*). The calculation provides the proportion of a cohort that would retire by age 55 or age 59 if the patterns observed in one period (say 1990) existed over longer periods of time.

The cumulative take-up rates for men (both at age 55 and 59) clearly peaked in 1995 and fell back in both 2000 and 2003 (Chart C). In contrast, the rate for

**Chart C Cumulative pension take-up rates dropped after 1995 for men but not for women**



Source: Statistics Canada, Longitudinal Administrative Database

women at age 55 increased in every period while the rate at 59 declined only marginally. The overall effect is that the cumulative take-up rates of men and women are converging over time.

### Young pensioners' employment affected by public-sector cuts

Although more than half of early pensioners in the two most recent cohorts had at least some employment earnings in the year following their retirement, re-employment was significantly lower in 1996, at 40.1% (Chart D).<sup>5</sup> The slump in re-employment in the mid-1990s was likely the result of a combination of low aggregate demand and a relative flood of competing job-seekers from the early take-up peak. For example, national unemployment averaged 9.6% in 1996, barely down from a recessionary peak of 10.3% in 1991, before falling to 7.2% in both 2001 and 2004.

### An alternative measure of pension coverage

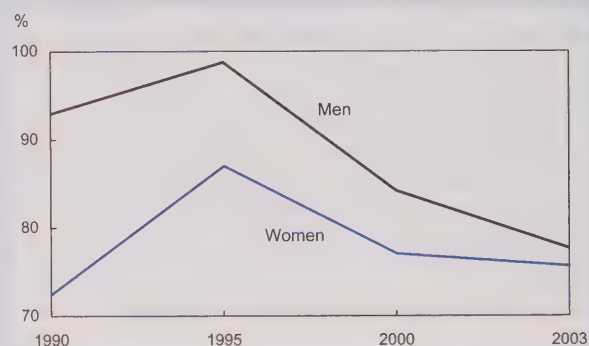
Estimates of pension plan coverage are available from several surveys. Employee surveys may suffer from employees' poor knowledge of their pension plans (Morissette and Drolet 2001). Information from employers may be more accurate in terms of current coverage, but not all employees currently covered will necessarily receive a pension in the future. Most pension plans have a lengthy waiting period before employees are 'vested' in the plan, meaning they have the right to eventually receive retirement benefits. Employees who leave the company before they are vested are typically entitled to a return of their contributions (if any) but will not receive benefits in the future. Employees who change jobs frequently may spend a considerable portion of their careers *covered* by pension plans without receiving benefits from those plans in their retirement.

Tax data enable calculation of an alternative measure of pension coverage that is akin to the estimation of life expectancy. Life expectancy is based on 'life tables', which show probability of surviving from birth to age 1, age 1 to 2, and so on for any period or cohort. These survival rates can then be transformed into a single estimate of life expectancy. Similarly, the survival rate without a pension can be calculated for each pair of ages from 50 to 69.<sup>4</sup> When chained together, these rates give the probability of reaching age 69 without any pension income. The pension coverage rate is 1 minus this probability.

This method accounts for all private pension entitlements accumulated over one's career. The rate may be biased upwards if many people convert RRSPs to RRIFs before age 69. It may be biased downwards if many decide to keep working and not collect their pension entitlements until after age 69. It can also be affected by the business cycle—if, for example, organizations use pension incentives to reduce their workforces in times of slack demand.

These calculations indicate that pension coverage peaked in the mid-1990s; almost all men and 87% of the women retiring at that time could expect at least some private pension income. Since then, the cumulative probability of receiving pension income has dropped precipitously for men and more moderately for women. As a result, the male-female gap in lifetime pension coverage fell from almost 20 percentage points in 1990 to just 2 points in 2003.

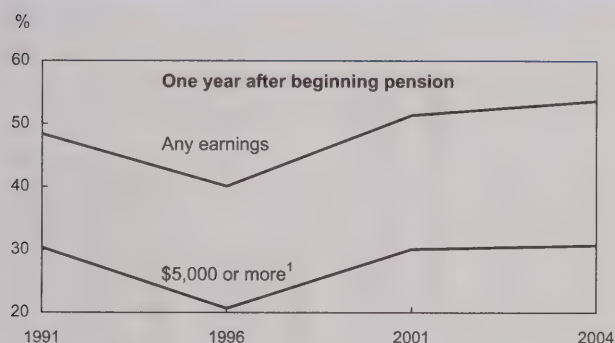
### Cumulative pension take-up rate for 69-year-old men and women



Source: Statistics Canada, Longitudinal Administrative Database



**Chart D After a trough in 1996, the proportion of young pensioners with employment earnings increased**



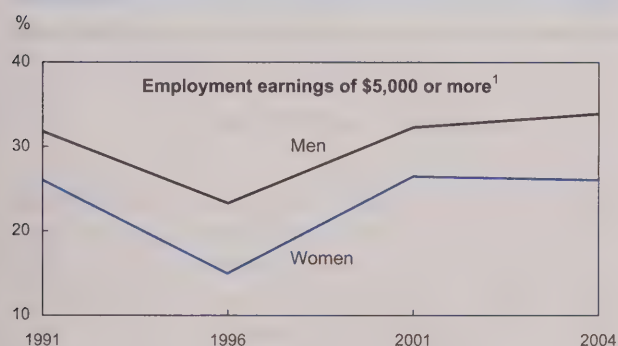
¹ In 2004 dollars.

Source: Statistics Canada, Longitudinal Administrative Database

Moreover, 1996 was the peak year for public-sector cutbacks, with average employment there falling by more than 100,000 from 1995.

Much employment for pensioners is short-term and/or part-time. In raising the bar to \$5,000 (2004 dollars), labour market attachment loosens appreciably. Focusing on 2001 and 2004, just 30% of early pensioners earned at least \$5,000 from employment in the year after retirement.

**Chart E One year after retirement, women were less likely to be re-employed**



¹ In 2004 dollars.

Source: Statistics Canada, Longitudinal Administrative Database

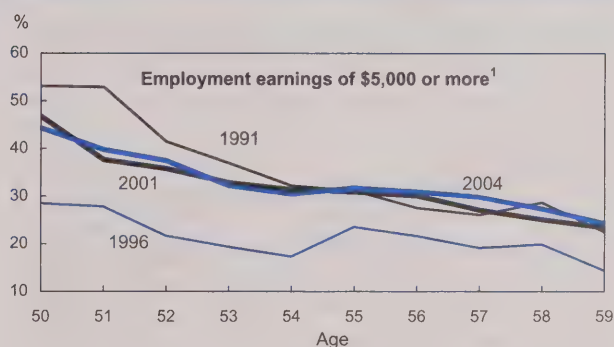
Recent studies have shown that women still contribute more time to housework (Marshall 2006) and are more intensively engaged in elder care (Pyper 2006). These factors undoubtedly contribute to the lower re-employment rate of women (Chart E). Using at least \$5,000 of employment earnings as the participation measure, the gap between men and women ranged from 5 to 8 percentage points during the study period.

**After pension uptake, the probability of re-employment declines with age**

Since those who retire before age 55 are likely to have reduced pension entitlements and more years of retirement to finance, greater labour force attachment could be expected among them than among older retirees. Indeed, those first collecting a pension at age 59 were only about half as likely to earn at least \$5,000 from a job as their 50-year-old counterparts (Chart F). In each period, labour force attachment generally falls as age at uptake increases, but with some notable differences over time.

As noted earlier, re-employment was much lower in 1996 than in the other years, and this extended across the age range. The re-employment rates were very similar in the 2000s and 1991 from age 54 up, but appreciably lower from ages 50 to 53.

**Chart F The older the pensioner, the less likely re-employment**



¹ In 2004 dollars.

Source: Statistics Canada, Longitudinal Administrative Database

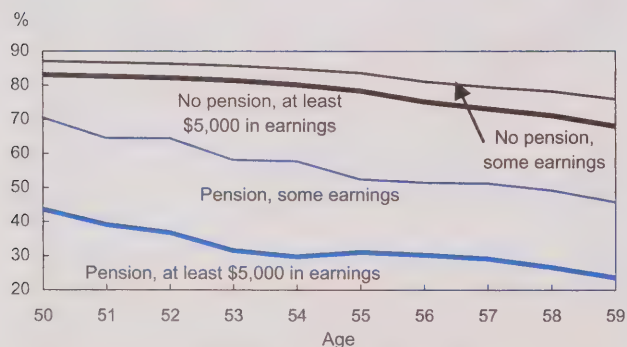
## Non-pensioners are much more likely than pensioners to remain employed

The probability of working for pay falls as age increases for those who begin to collect a pension in any year, but one would expect that to also be the case for the rest of the population. This comparison group includes those who may take up a pension in the following year or exit the labour force for any reason. In fact, those not receiving pension benefits in any year participated in the labour market at a much higher rate, with less drop-out through their 50s, than those who began collecting pensions (Chart G). Indeed, it would be very surprising not to find a large gap in labour force participation between these two groups, but the magnitude of the difference highlights the loss of potential labour supply.

A substantial gap in labour market attachment between pensioners and non-pensioners is evident at age 50 and widens for older cohorts. Among those who started receiving pensions at age 50 in 2003, 71% earned some employment income the following year, compared with 87% for non-pensioners the same age. At age 59, the corresponding figures were 46% and 76%.

The employment gap between pensioners and non-pensioners is even wider when the bar is raised to a minimum of \$5,000 of employment income. This level has very little effect on the attachment indicator for non-pensioners, but as noted earlier, significantly reduces the proportion of pensioners considered significant participants in the labour market. Although the

**Chart G Labour force attachment of pensioners is much lower**



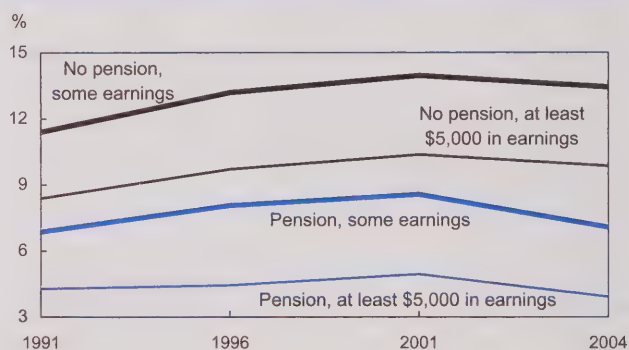
Source: Statistics Canada, Longitudinal Administrative Database, 2004

figures decline for both groups in the older cohorts, non-pensioners remain more than twice as likely as pensioners to be earning at least \$5,000. The gap between pensioners and non-pensioners was greatest in 1996, when the re-employment rate of pensioners was particularly low (data not shown).

## Self-employment rates are lower among pensioners

Although the retired organization man hanging out his shingle as a consultant is a popular image in the business media, the reality is different. Less than 1 in 10 early pensioners earned any self-employment income in the year following their retirement (Chart H). And that figure dropped to 1 in 20 or less for those with at least \$5,000 of self-employment earnings. In both cases, non-pensioners were far more likely to earn self-employment income.

**Chart H Self-employment among pensioners lags behind**

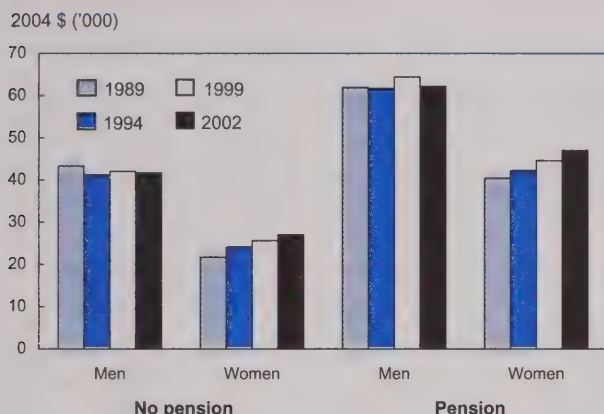


Note: Earnings are from self-employment and in 2004 dollars.  
Source: Statistics Canada, Longitudinal Administrative Database

## Young pensioners retired from high-paying jobs

Previous studies of early retirees have reported high levels of education and pre-retirement salary (Kieran 2001). The LAD data also show dramatically higher pre-pension earnings for young pensioners (Chart I). The median pre-pension salary for men was over \$60,000 (2004 dollars) compared with just over \$40,000 for those not collecting a pension the following year. Although the earnings of women were gen-



**Chart I Young pensioners had much higher median earnings in the previous year**

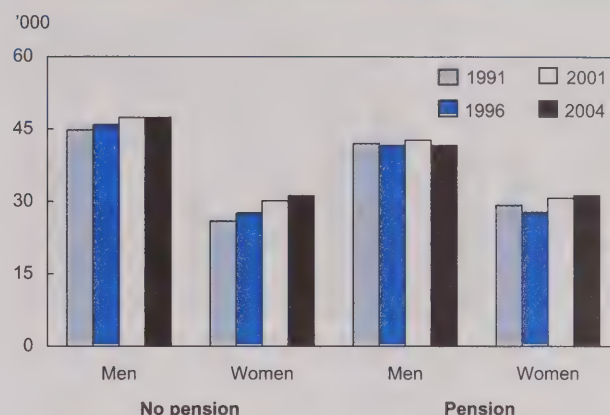
Source: Statistics Canada, Longitudinal Administrative Database

erally lower, the gap between pre-pensioners and other workers was even greater. In each period, women going on to collect pensions earned about two-thirds more than their counterparts' median salary. In fact, since 2001, women retiring the subsequent year earned more than men continuing in the workforce.

### Women in retirement brought in as much income as those who continued working

In the year following pension uptake, total income provides a better comparison because of the drop-off in employment earnings already noted for young pensioners. Despite the loss of employment earnings, the median total income of women taking a pension in their 50s remained at least as high as the total income of their working counterparts (Chart J). The gap between the two groups was as high as 11% in 1991, but has since closed as the income of working women in their 50s grew more.

Among men in their 50s, pensioners had a lower median income than continuing workers. The gap doubled from 7% in 1991 to 14% in 2004 as the real income of pensioners stagnated while increasing by 6% for those who continued working.

**Chart J Women's median taxable income was less affected in the year following pension uptake**

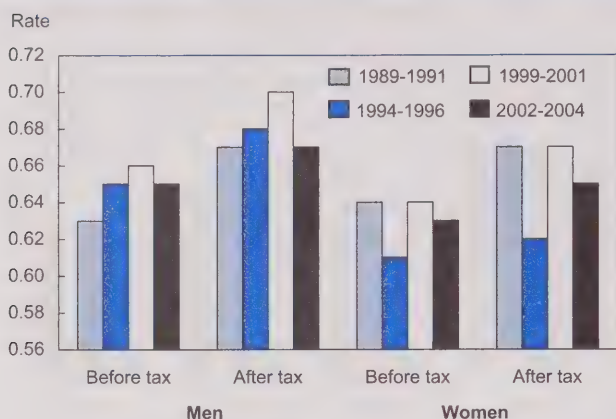
Source: Statistics Canada, Longitudinal Administrative Database

### Young pensioners replace about two-thirds of their pre-retirement income

In the financial planning industry, a widely cited rule of thumb is that workers should aim to replace 70% of their salary after they retire. Others argue that 70% is too high since most retirees will be free of many common expenses (mortgages, children's education, retirement savings, work-related expenses) and suggest that 50% might be a more reasonable target (Hamilton 2001). Regardless of the merits of either argument, the typical early pensioner falls into the upper end of this range, replacing approximately two-thirds of pre-retirement income the year after beginning to receive pension payments (Chart K). Pre-tax replacement rates ranged from 61% for women in 1996 to 66% for men in 2001. The pre-tax replacement rate for men was usually slightly higher.

### Progressive income tax increases replacement rate

A progressive income tax structure is characterized by ascending income brackets with progressively higher tax rates. When income falls from one year to the next, the last dollar earned is likely in a lower tax bracket, or

**Chart K Men had higher income replacement rates**

Source: Statistics Canada, Longitudinal Administrative Database

less income falls in the highest bracket. In either case, an individual's average tax rate will fall so that the drop in after-tax income is less than the drop in pre-tax income.

For men, the difference between pre- and after-tax income replacement rates fell from 4 percentage points in 1989–1991 to 2 percentage points in 2002–2004, likely due to the trimming of top marginal tax rates in several provinces. For women, the after-tax increase in replacement rates varied from 1 to 3 percentage points. Since women's incomes have been increasing faster than men's, a level effect offsets some of the rate trend effect noted for men. As a result, no clear trend is evident for women.

### Pension benefits account for almost two-thirds of post-retirement income

Young pensioners counted on RPP benefits for more than half of their income in each cohort. However, their importance increased markedly for all periods after 1991 (Table). RPP benefits accounted for 56% of young pensioners' total income in 1991, jumped to 64% in 1996, and then settled back slightly in the 2000s. The jump in 1996 is mainly attributable to rising real pension benefits combined with a business-cycle-related drop in re-employment earnings. Over the longer run, transfer payments (Employment Insur-

**Table Components of early pensioner income**

	1991	1996	2001	2004
<b>Both sexes</b>				
	<b>46,100</b>	<b>43,600</b>	<b>46,900</b>	<b>45,300</b>
	2004\$ %			
Employment earnings	22.8	16.1	23.0	23.6
Self-employment earnings	2.0	1.6	2.6	2.0
Other market income	14.5	14.7	11.3	9.9
Pension income	55.7	64.0	61.0	62.3
Transfers	5.0	3.7	2.1	2.2
<b>Men</b>				
	<b>50,900</b>	<b>49,800</b>	<b>54,400</b>	<b>52,100</b>
	2004\$ %			
Employment earnings	23.8	17.5	24.3	25.7
Self-employment earnings	2.4	1.8	2.8	2.3
Other market income	12.8	14.3	11.0	9.2
Pension income	56.6	63.5	59.9	60.7
Transfers	4.5	3.0	2.0	2.1
<b>Women</b>				
	<b>32,700</b>	<b>30,400</b>	<b>34,500</b>	<b>35,200</b>
	2004\$ %			
Employment earnings	18.3	11.2	19.7	19.0
Self-employment earnings	0.0	1.0	2.0	1.4
Other market income	22.3	16.1	12.2	11.6
Pension income	52.3	65.8	63.5	65.6
Transfers	7.0	5.9	2.6	2.3

Source: Statistics Canada, Longitudinal Administrative Databank

ance, social assistance, disability), and other market income (mainly investment income and RRSP withdrawals) have declined for this group.

The trends differ slightly for men and women. RPP benefits for women rose through the period, while for men they stagnated after 1996—although a considerable gap still exists. Other market income peaked for men in 1996, but declined for women over the period. Employment earnings and transfer payments followed similar trends for men and women. Putting it all together, women were more reliant on RPP benefits in each year from 1996 onwards, with the gap increasing marginally in each period.

### Conclusion

While some commentators are concerned about the effects that baby boomers retiring will have on labour supply and public pension programs, many individuals aspire to and can afford to retire at a relatively young age. The main public pension plans, C/QPP and



OAS/GIS, provide retirement benefits at ages 60 and 65, respectively, but at quite low rates. In contrast, many employer pension plans (RPPs) offer substantial benefit payments to contributors in their 50s who meet long-service milestones.

According to tax data, about 1 in 5 workers collect pension benefits before the age of 60. The pension uptake rate peaked in the mid-1990s when governments and other large organizations were downsizing, often by way of early retirement incentives. Although the business cycle at this time may also have contributed to this phenomenon, trends in pension coverage seen in both tax and survey data indicate that the same level is unlikely to recur, especially for men.

Since most pension plans specify substantial benefit penalties before the age of 55, retirement before that age is rare. On average, less than 1% of workers aged 50 to 54 begin receiving pension benefits. As the penalties drop off at age 55, the uptake rate jumps to about 4.5% of workers per year. The age 55 spike has been trending down somewhat for men but up for women. For both sexes, those most disposed to retirement leave at 55. The rate subsequently falls and does not surpass the earlier peak until workers are in their 60s.

Since young pensioners have many years of expenses ahead and high levels of experience, some may choose to continue working to supplement their pensions. About half of recent cohorts had at least some employment income the year after they began receiving their pension. However, that proportion falls to less than a third if the benchmark is raised to a mere \$5,000. Similarly, pensioner participation in self-employment is very low. Both employment and self-employment rates of comparable non-pensioners are much higher than for pensioners. Overall then, most early pensioners have a relatively weak attachment to the labour market.

This weak attachment may well be due to lack of financial need. Before retiring, they were earning far more, on average, than their counterparts. In retirement, their total income approaches the income of those still working, although a gap is opening up for men. Taxation is another factor. The progressive income tax structure works to increase the replacement rate of after-tax income compared with the pre-tax rate. Moreover, the employment earnings of pensioners are taxed at the marginal rate of their last dollar of pension earnings. This virtually ensures that their labour will be taxed at a higher rate in 'retirement' than

it was before collecting a pension. This effect may dissuade some from working or depress the number of hours for those that do work.

Counting all sources of income, the typical early pensioner replaces almost two-thirds of pre-retirement income—near the upper end of recommended replacement rates. Over 60% of their income, on average, comes from pension benefits, followed by employment earnings (24%) and other market income—mainly RRSP withdrawals and other investments (10%). Moreover, income for most early pensioners will rise as they hit the benchmark ages of 60 and 65 and become eligible for C/QPP and OAS and GIS benefits. As a result, labour market attachment will likely become even weaker.

The question remains whether early retirement should be a public policy concern, especially with respect to future labour supply. Although the data definitely show a recovery in re-employment among early pensioners since the mid-1990s, age- and sex-specific rates have remained essentially flat in the 2000s. Thus it is unlikely that early pensioners will represent a growing source of labour supply in the years to come.

On the other hand, the tax-record measure of pension coverage indicates (as do numerous survey sources) that RPP coverage is on the decline among younger cohorts—more so for men than for women. Since workers without RPPs generally earn less and their accumulated RRSP wealth is lower, on average, than the RPP assets of covered workers, their working careers tend to be longer. To the extent that this portion of the workforce is growing, the proportion of older workers in the labour market is likely to increase.

In addition, as the population ages, longer-run economic effects will probably come into play. If labour shortages do develop, higher wages may draw more pensioners back into the labour market. Or the demand structure may change so that shortages occur only in some sectors or geographic regions. Investment, productivity growth and health trends will also be important factors in the long run, since they have cumulative effects on society's ability to support an aging population.

*The author gratefully acknowledges the assistance of André Bernard, Small Area and Administrative Data Division.*

## ■ Notes

1 Since RRSPs can be managed more flexibly than RRIFs (in terms of deposits and withdrawals), there is no clear reason to convert them into RRIFs before the mandatory age of 69. Some people may opt for a steady stream of income at an earlier age in the form of an annuity financed from RRSP savings, but such income is not included in the pension and superannuation income variable.

2 This condition is shortened to one year for 59 year-olds since they may choose to initiate C/QPP retirement benefits at age 60. In general, only C/QPP disability or survivor benefits can be paid to a person in their 50s.

3 For these defined-benefit plans, benefits are typically based on the product of average earnings (over a given period), years of service, and a percent per year factor. Some plans allow members to retire before achieving the prescribed numbers but with significant reductions to benefits.

4 The series is stopped at age 69 since the pension income variable also captures the conversion of RRSP funds into RRIF-generated income, which typically takes place at age 70 (Wannell 2006).

5 Using the Survey of Labour and Income Dynamics, Pyper and Giles (2002) found re-employment rates of about 50% for workers in their 50s who voluntarily left long-term jobs between 1993 and 1997. Over two-thirds of these voluntary job leavers reported retirement as the reason for leaving their career job.

## ■ References

- Bowlby, Geoff. 2007. "Defining retirement." *Perspectives on Labour and Income*. Vol. 19, no. 1. Spring. Statistics Canada Catalogue no. 75-001-XPE. p. 55–59.
- Hamilton, Malcolm. 2001. "The financial circumstances of elderly Canadians and the implications for the design of Canada's retirement income system." In *The State of Economics in Canada: Festschrift in Honour of David Slater*. Patrick Grady and Andrew Sharpe (eds.). Montréal. McGill-Queen's University Press. p. 225–253.
- Kieran, Patrick. 2001. "Early retirement trends." *Perspectives on Labour and Income*. Vol. 13, no. 4. Winter. Statistics Canada Catalogue no. 75-001-XPE. p. 7–13.
- Marshall, Katherine. 2006. "Converging gender roles." *Perspectives on Labour and Income*. Vol. 18, no. 3. Autumn. Statistics Canada Catalogue no. 75-001-XPE. p. 7–19.
- Morissette, René and Marie Drolet. 2001. "Pension coverage and retirement savings." *Perspectives on Labour and Income*. Vol. 13, no. 2. Summer. Statistics Canada Catalogue no. 75-001-XPE. p. 39–46.
- Pyper, Wendy. 2006. "Balancing career and care." *Perspectives on Labour and Income*. Vol. 18, no. 4. Winter. Statistics Canada Catalogue no. 75-001-XPE. p. 37–47.
- Pyper, Wendy and Philip Giles. 2002. "Approaching retirement." *Perspectives on Labour and Income*. Vol. 14, no. 4. Winter. Statistics Canada Catalogue no. 75-001-XPE. p. 9–16.
- Schellenberg, Grant and Cynthia Silver. 2004. "You can't always get what you want: Retirement preferences and experiences." *Canadian Social Trends*. No. 75. Winter. Statistics Canada Catalogue no. 11-008. p. 2–7. <http://www.statcan.ca/english/freepub/11-008-XIE/0030411-008-XIE.pdf> (accessed February 8, 2007).
- Schellenberg, Grant, Martin Turcotte and Bali Ram. 2005. "Post-retirement employment." *Perspectives on Labour and Income*. Vol. 17, no. 4. Winter. Statistics Canada Catalogue no. 75-001-XPE. p. 14–17.
- Statistics Canada. 2006a. *New Frontiers of Research on Retirement*. Leroy O. Stone (ed.). Statistics Canada Catalogue no. 75-511-XIE. Ottawa. 444 p. <http://www.statcan.ca/english/freepub/75-511-XIE/0010675-511-XIE.pdf>.
- . 2006b. *The Wealth of Canadians: An Overview of the Results of the Survey of Financial Security, 2005*. Statistics Canada Catalogue no. 13F0026MIE001. Ottawa. Pension and Wealth Research Paper Series. 40 p. <http://www.statcan.ca/english/research/13F0026MIE/13F0026MIE2006001.pdf> (accessed February 8, 2007).
- Wannell, Ted. 2006. "Cracking the RRSP nest egg." *Perspectives on Labour and Income*. Vol. 18, no. 2. Summer. Statistics Canada Catalogue no. 75-001-XPE. p. 19–27.



# Defining retirement

Geoff Bowlby

*This paper was originally presented to the Paris Group, a body of statisticians and economists from national statistical organizations around the world interested in improving labour statistics. Part of the seventh session of the Paris Group, held in Budapest, dealt with the issue of aging and labour markets. The goal of the paper was to begin international dialogue on how national statistical organizations can measure retirement.*

**C**urrently 32 million, Canada's population is rapidly aging. Like many countries, Canada experienced a baby boom in the 20 years after World War II, followed by a period of declining fertility. Throughout its history, this baby-boom generation has had a major impact on society and the economy, and now is poised to transform the size and nature of the workforce.

With the eldest baby boomers having turned 60 in 2006, it is expected that a considerable number of people will retire in coming years. The inevitable wave of retirement will change the general nature of society as a greater share of the population moves from work to activities more typical of retirement. As a result, labour force participation is expected to fall, putting pressure on an already tight labour market (Chart A).

## How will the retirement boom affect labour markets?

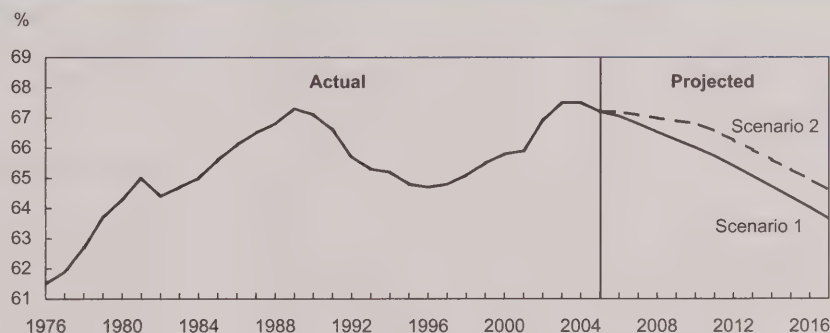
Although far from a sophisticated approach to labour force forecasting, the following discussion serves to illustrate the impact of the baby boomers' exit from the labour force.

Because people age and retire, rates of labour force participation are much lower for older people than

for younger people. Suppose the current rates of labour force participation by age group stay the same.<sup>1</sup> Under this simple scenario, the labour force participation rate should fall considerably with the aging of the population. The downward pressure has already begun and should continue for at least the next 25 years. From highs around 67.5% in 2004, the rate in Canada could be around 60% within 20 years, all else being equal.

Participation rates in that range would be extremely low for Canada. In fact, they have not been at such a low level since the early 1970s, when women began entering the labour force in large numbers and expanding the labour supply.

**Chart A** Unless labour force participation by age changes, the overall rate will decline steadily for years



Scenario 1: Medium population growth, participation by age group constant at 2005 rates.  
Scenario 2: Medium population growth, participation among older people rising for next five years then constant.

Sources: Statistics Canada, Labour Force Survey, Population Projections

*Geoff Bowlby is with Environment Accounts and Statistics Division. He can be reached at 613-951-3325 or [geoff.bowlby@statcan.ca](mailto:geoff.bowlby@statcan.ca).*

Whether aging boomers push the relative supply of labour to these lows remains to be seen. A variety of reasons could keep them in the labour market longer than earlier generations. Indeed, the Labour Force Survey has been showing a slow upward movement in the retirement age in recent years, a switch from a long-term downward trend (Chart B). On the other hand, boomers may exit sooner than retirees in the past. In any case, the inevitable exit of a large number of employed baby boomers (over 7.5 million) should put downward pressure on the size of the labour supply.

What would be the effect on unemployment rates, the most popular indicator of the state of the labour market? That would depend on labour demand, which has more to do with aggregate economic conditions and technological change than with demographics, making the answer difficult to predict. If demand for labour were to rise, even marginally, in this upcoming era of labour supply contraction, then unemployment rates could fall. Whatever the eventual labour demand scenario, the unemployed should benefit from job opportunities provided by the thousands of Canadians retiring. The aging of the population should therefore exert downward pressure on the unemployment rate. Indeed, in 2005, as the labour supply contracted (in part because of the aging workforce) and demand boomed, the unemployment rate hit record lows.

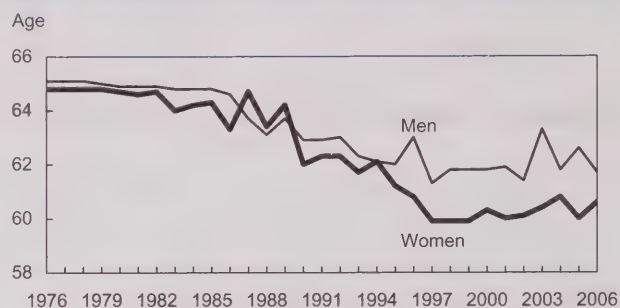
### Measuring retirement

The above discussion is not meant to be a rigorous forecasting of labour market trends. Rather, it is designed to show the potential impact of the inevitable retirement wave. Even though this wave will have significant labour market consequences over the next 20 years, no regular statistics are produced on the retired population.

There are some reasons for this. Only recently has the need for retirement data grown. Secondly, the concept of retirement is fuzzy, to say the least. Retirement can mean different things to different people, and measuring it is difficult for national statistical organizations. Having an international standard would assist in deciding what data or range of data should be produced.

So what is retirement? It is both an event and a state of being. For example, a retirement party is held for someone to celebrate the event. Subsequently, a person enters retirement, a new phase of life.

**Chart B After a decade of decline, retirement age seems to have plateaued**



Source: Statistics Canada, Labour Force Survey

Measuring the event of retirement probably has lower priority for statistical agencies. When it comes to labour statistics, measuring life events is perhaps not required to the same extent as measuring the state of human activity. For example, estimates of the number of layoffs or exits from employment (the event) are less in demand than estimates of the number of unemployed (the state, which is a result of the event). Thus, any international standard should perhaps focus first on defining and then measuring the people who are in the state of retirement rather than on counting how many retirements have taken place.

With that in mind, how might national statistical organizations proceed? First of all, household surveys would likely be the main instrument for determining retirement statistics. Supplementing these would be administrative records such as pension or taxation records. Business surveys may provide some important information on human resource preparation for retirement or on retirement events, but are limited by the reality that the retired population will mostly not be working.

### Conceptual difficulties

A plethora of definitions exist for the state of retirement (Smeeding and Quinn 1997). Because these range from very broad to more precise, the choice of definition noticeably affects the size of the population being measured. For some, retirement means complete withdrawal from the labour force, while for others it entails remaining partly or even fully active in the labour market.



Some of the complications in measuring the retired population stem from the myriad of work arrangements from which a person may have exited (Table). The concept of retirement is more applicable in some cases than in others. For example, someone who has left a full-time job at older age, is not working, and receives a pension has undoubtedly retired. But what about a self-employed farmer who has scaled back operations in older age but is still farming? Examining a set of similar scenarios could be useful.

Such an exercise is also useful for demonstrating two important facts about measuring the retired population: they should be of an older age, and their previous activity matters (but not for everyone).

To elaborate, younger people by definition ought not to be considered retired since the concept of retirement is typically reserved for older people (exact age being up for discussion). Secondly, although the retired are defined by their previous activity, their current labour market activity also plays a role. For example, an employee who worked for a long period and then stopped working in older age, never intending to work again, should be counted as retired on the basis of past labour market activity and the nature of the exit. But what if such a person were currently employed? Should they still be considered retired?

**Table Definitions of retirement**

Individual	Retired?
Full-time employee for a long period, stopped working in older age, now not working	Yes
Full-time employee for a long period, stopped working in older age, now working part time at another job	?
Full-time employee for a long period, now working part time in older age for same employer	?
Self-employed business owner in older age, business now controlled by or sold to someone else	Yes
Self-employed business owner not in older age, business now controlled by or sold to someone else	No
Self-employed business owner in older age working reduced hours	?
Employee working at a series of short-term jobs, stopped working in older age	?
Person who never worked or whose last job was long ago, person now in older age	?

In reality, many people do not become retired overnight. Rather, a transition occurs as one moves from more intense labour market activity toward relative inactivity. At what point along this gradient should a person be considered retired? At an early stage they could perhaps be considered semi-retired.

### Statistics Canada measures

In addition to complications in defining the retired, another reality is that household survey measuring instruments will always have limitations. One could have a very precisely defined concept of retirement, for example, but never be able to measure it. As a result, it may be useful to examine what has already been applied.

#### *The standard definition*

According to Statistics Canada's standard definition, 'retired' refers to a person who is aged 55 and older, is not in the labour force, and receives 50% or more of his or her total income from retirement-like sources. Ironically, the person who led the research for this definition, which was instituted in the late 1990s, has since retired. Very little is now known about the background research for this definition.

The definition seems reasonable and perhaps has the advantage of being an objective measure that is not reliant upon personal perceptions. However, it has one important limitation: it can only be applied using household surveys that have both a labour module and an income module. As a result, only two surveys, the Survey of Labour and Income Dynamics (SLID) and the Census can apply this definition. Other key household surveys, such the Labour Force Survey (LFS), cannot.

While SLID and the Census can be very important tools for retirement research, they may be less timely than what potential users of retirement data may demand. Timely statistics may become increasingly important if the retirement wave leads to significant labour shortages.

#### *Survey of Labour and Income Dynamics*

In a recent compendium, an article on work to retirement transitions defines retirement as "a condition achieved when a person leaves the labour market for good and receives retirement income (C/QPP, private pension, etc.). Retirement is deemed to have been achieved when a person has spent at least a year out of the labour market, has received retirement income during that period, and does not return to the labour market before the survey ends." (Deschênes and Stone 2006, 220).

Like the standard definition, this one is an objective measure. It is intended for use in a longitudinal survey, although retrospective questions in a cross-sectional survey asking when the person last worked could be used to determine who has been out of the labour market for a year or more. As with the standard definition, the definition above requires both labour and income modules and is subject to timeliness limitations.

### *General Social Survey*

The General Social Survey (GSS), an annual survey with rotating topics, asked a series of questions on retirement in 2002. Three types of respondents were categorized as retired: those whose main activity in the last 12 months was 'retired'; those whose main activity was something else but who said yes to the question "Have you ever retired?"; and those whose main activity was something else and who said they had never retired, but who said yes when asked if they had stopped working for a reason that was deemed to be retirement-related. Unlike the previous definitions, this one is not objective, instead relying on self perception of retirement status.

Some research using this definition has recently been published by Statistics Canada. According to the 2002 GSS, about 1.8 million Canadians were identified as having retired in the 10 years preceding the survey (Schellenberg and Turcotte 2005). These individuals had worked in the past and were 50 or older.

Again, the definition of who is retired seems reasonable. And again, the main limitation is the infrequent production of the data. Although much of the 2002 GSS content will be repeated with the 2007 survey, the rising demand for information on the older population may mean that other potential sources of retirement data ought to be investigated.

### *Labour Force Survey*

It seems natural for a labour force survey to measure the retired population, since all concepts of the state of retirement are defined by a person's past and present labour force status. However, in Canada this is not done. In fact, the LFS questionnaire pays relatively little attention to the older population. On top of this, very little information is collected on the 'not in the labour force' population since the survey focuses on characterizing the employed and unemployed.

Although the LFS cannot measure the number of retired people, it is the key source of data on average and median retirement age. During the interview, all

those not working are asked when they last worked. If the date is within the past year, they are asked the main reason they left their last job or business, to which they may respond 'retired'. The month and year of retirement is assumed to be the same as when the person last worked. Knowing this and the person's current age means an age of retirement can be estimated. Those who retired under 50 are excluded from the calculation (Gower 1997). Interestingly, these data show that the median retirement age fell from 65.0 in the mid-1970s to 60.6 in 1997—a time when the public sector was offering early retirement incentives to cut payrolls. Since 1997, the age has inched back up and was 61.0 in 2005.

Finally, although one cannot determine the number of retired using the current LFS questions, a mapping of the survey population who are not in the labour force provides some insight. This group can be divided into a number of parts, some of which are more likely to be retired than others. For example, of the 8 million people not in the labour force in 2005, about 3.5 million were 65 and older. Another 1.2 million did not want any work and were 55 to 64. Since 1997, all of the increase in the not in the labour force population can be accounted for by these two groups.

## Conclusion

Demand for data on retirement will increase in the near future as the inevitable wave of retirement begins to affect many facets of Canadian life, including the size of the labour supply. The following recommendations may inform the discussion:

- ❑ Measuring the state of retirement should take priority over measuring retirement events.
- ❑ Household surveys probably provide the best estimate of the retired population. Given the possible use of retirement data in understanding labour shortages, the data should be produced on a timely basis.
- ❑ The state of retirement should not necessarily mean economic inactivity. In reality, retirement is a progression toward such inactivity. Selecting a definition of retirement is really about deciding when a person is economically inactive enough to be counted as retired.
- ❑ People of relatively young age should not be considered retired.
- ❑ Activities should continue toward the development of a standard definition of retirement.



## ■ Note

1 The age groups used in this analysis were 15–19, 20–24, 25–29, 30–34, 35–39, 40–44, 45–49, 50–54, 55–59, 60–64, 65–69, and 70 or older.

## ■ References

- Deschênes, Nathalie and Leroy O. Stone. 2006. "The probability of reaching the state of retirement: a longitudinal analysis of variations between men and women." Ch. 13. In *New Frontiers of Research on Retirement*. Leroy O. Stone (ed.). Statistics Canada Catalogue no. 75-511-XIE. Ottawa. p. 219–245.  
<http://www.statcan.ca/english/freepub/75-511-XIE/0010675-511-XIE.pdf> (accessed January 30, 2007).
- Gower, Dave. 1997. "Measuring the age of retirement." *Perspectives on Labour and Income*. Vol. 9, no. 2. Summer. Statistics Canada Catalogue no. 75-001-XPE. p. 11–17.
- Schellenberg, Grant, Martin Turcotte and Bali Ram. 2005. "Preparing for retirement." *Canadian Social Trends*. No. 78. Autumn. Statistics Canada Catalogue no. 11-008-XIE. p. 8–11.  
<http://www.statcan.ca/english/freepub/11-008-XIE/0020511-008-XIE.pdf> (accessed January 30, 2007).
- Smeeding, Timothy M. and Joseph F. Quinn. 1997. *Cross-National Patterns of Labor Force Withdrawal*. Paper presented at the Fourth International Research Seminar of the Foundation for International Studies on Social Security, June 15–17, 1997, Sigtuna, Sweden.

**We welcome your views** on articles and other items that have appeared in *Perspectives*. Additional insights on the data are also welcome, but to be considered for publication, communications should be factual and analytical. We encourage readers to inform us about their current research projects, new publications, data sources, and upcoming events relating to labour and income.

Statistics Canada reserves the right to select and edit items for publication. Correspondence, in either official language, should be addressed to *Perspectives on Labour and Income*, 170 Tunney's Pasture Driveway, 9-A5 Jean Talon, Statistics Canada, Ottawa, Ontario K1A 0T6. Fax 613-951-4179; e-mail: [perspectives@statcan.ca](mailto:perspectives@statcan.ca).

# What's new?

## *Recent reports and studies*

### ■ FROM STATISTICS CANADA

#### ■ *Low-income rates among immigrants*

The economic situation of new immigrants to Canada showed no improvement after the turn of the millennium, even though they had much higher levels of education and many more were in the skilled immigrant class than a decade earlier.

In 2002, low-income rates among immigrants during their first full year in Canada were 3.5 times higher than among Canadian-born people. By 2004, this had edged down to 3.2. These rates were higher than at any time during the 1990s, when they were around three times.

The increase in low income was concentrated among immigrants who had arrived within the last two years. This suggests they had more problems adjusting over the short term during the years since 2000.

One possible explanation may have been the downturn in the technology sector after 2000. The proportion of recent immigrants in information technology and engineering occupations rose dramatically over the 1990s.

Overall, the large increase in educational attainment of new immigrants, and the shift to the skilled class immigrant, had only a small impact on the likelihood of being in low income.

For more information, see the January 30, 2007 issue of *The Daily* on the Statistics Canada's Web site ([www.statcan.ca](http://www.statcan.ca)).

#### ■ *Regional differences in work hours*

Workers in the Prairie provinces, as well those in Ontario, put in more working hours on average in 2004 than their counterparts in other regions.

Workers in Alberta led, averaging 1,880 hours—equivalent to 36 hours a week for a full-year worker. Their counterparts in Manitoba and Saskatchewan combined were close behind with 1,860, followed by workers in Ontario, with 1,850.

In contrast, workers in British Columbia averaged 1,790 hours. Those in the Atlantic region put in 1,780, while workers in Quebec reported the fewest hours, at 1,750.

Regional differences in work hours were larger among men. Employed men in Manitoba and Saskatchewan reported 2,080 hours, while their counterparts in Alberta worked 2,060 hours. Men in Quebec averaged 1,900 hours, the least.

There is no easy explanation for regional differences. Factors that can be readily measured in household surveys include differences in unionization rates, industrial structure (e.g., the type of industries found in the regions), job characteristics (such as firm size and management responsibilities), and demographic factors (e.g., age, sex, education, marital status and work experience).

Differences in industrial structure and job characteristics accounted to a large extent for the share of workers with short years (less than 1,500 hours), as well as one-third to two-thirds of the differences in the share of workers with a standard full-time, full-year schedule (1,900 to 2,300 hours).

However, they did not account for much of the regional differences in the share of 'long-year' workers (more than 2,300 hours). They also did not explain why Quebec had a much larger share of workers with a low full-year and full-time schedule (1,500 to 1,900 hours).

For more information, see the January 22, 2007 issue of *The Daily* on the Statistics Canada's Web site ([www.statcan.ca](http://www.statcan.ca)).



## ■ *Effects of international mobility on individual earnings*

Men who left Canada to live abroad for a period of time had, on average, substantially higher earnings than those who never left. However, most of these differences were already apparent in their pre-move earnings patterns.

The effects of leaving and coming back as measured by the change in relative earnings levels appear to be much more moderate. The change also varied significantly by the number of years spent away and pre-departure income levels.

Overall, men who left for two to five years appear to have done best in terms of their earnings. Their post-return earnings were 12% higher in their first five years back, compared with their last five years before leaving (after accounting for their expected earnings growth had they stayed in Canada). Those who left for only one year showed a more moderate 7% average increase in their relative earnings.

Men who were away six years or more were found to have lower earnings after their return than otherwise might have been expected. However, these patterns varied significantly, and might well have been due to particular events related to the return, such as moving into retirement.

For more information, see the January 18, 2007 issue of *The Daily* on the Statistics Canada's Web site ([www.statcan.ca](http://www.statcan.ca)).

## ■ *Earnings losses of displaced workers*

High-seniority employees who lost their job during the 1990s as a result of firm closures and mass layoffs suffered substantial losses in earnings, even five years later.

Workers losing their job through firm closures or mass layoffs experienced average earnings losses that represented at least 9% of their pre-displacement earnings. Losses incurred by workers with substantial seniority were more pronounced.

Five years after they lost a job, men who had at least five years of seniority and found another job experienced losses of between 18% and 28% of their former earnings. For women, the losses ranged between 24% and 26% of their pre-displacement earnings.

In 2000 dollars, the average loss in earnings for high-seniority men five years after losing their job varied between \$7,100 and \$10,900. The corresponding range for women was between \$5,500 and \$6,100.

In any given period, regular economic activity leads to resource reallocation resulting from technological changes, changes in trade patterns, consumer preferences, and numerous other factors. While such resource reallocation is generally thought to have overall beneficial effects, leading to increased productivity and living standards, it can expose some workers to job loss.

For more information, see the January 16, 2007 issue of *The Daily* on the Statistics Canada's Web site ([www.statcan.ca](http://www.statcan.ca)).

## ■ *Changes in provincial labour productivity*

Relative levels of total-economy labour productivity remained fairly stable in most provinces from 1997 to 2005, when these changes in provincial productivity, measured in 1997 dollars, are compared with the national average change.

However, the most notable exception was Newfoundland and Labrador, which experienced much stronger average productivity growth than other provinces. Its productivity growth was so strong that it moved from sixth place in overall productivity in 1997 to third place in 2005, behind Ontario and Alberta.

Nationally, labour productivity grew at an average annual rate of 1.6% from 1997 to 2005. But in Newfoundland and Labrador, it increased 3.2%. The only other province where labour productivity growth exceeded the national average was Saskatchewan, where the average annual increase was 2.1%.

The smallest gains occurred in Quebec and Prince Edward Island, both at 1.3% annually, and in Alberta, where the average increase was 1.2%. Other provinces were at or near the national average.

For more information, see the January 15, 2007 issue of *The Daily* on the Statistics Canada's Web site ([www.statcan.ca](http://www.statcan.ca)).

## ■ **Labour productivity, hourly compensation, and unit labour cost**

Labour productivity in Canadian businesses fell by 0.1% between July and September 2006, slightly less than the 0.3% decline posted in the second quarter. This was the second straight decline following seven consecutive quarters of positive growth.

Productivity gains in mining; oil and gas extraction; financial, insurance and real estate services; rental services; and wholesale trade were completely offset by losses in manufacturing and construction.

In the first three-quarters of 2006, productivity posted an average quarterly growth of 0.5% in the United States, while Canada's average remained at zero. A substantial slowdown in both countries in productivity growth was observed compared with 2005.

With the value of the Canadian dollar remaining unchanged against the U.S. dollar, the increase in the unit labour cost of Canadian businesses moved closer to the increases experienced by their American counterparts.

For more information, see the December 11, 2006 issue of *The Daily* on the Statistics Canada's Web site ([www.statcan.ca](http://www.statcan.ca)).

## ■ **Wage differences between male and female university professors**

More women are teaching full time in Canadian universities, and although they still earn less on average than their male counterparts, the difference has narrowed.

Among full-time professors who began their jobs in the 1960s, men earned about \$10,000 to \$15,000 more per year than women, depending on their age. Among more recent cohorts starting work since the mid-1980s, men were earning about \$5,000 more than women.

The difference in salaries narrowed because successive cohorts of male faculty earned less throughout their career than their predecessors did. In other words, female professors gained ground relative to male professors because new male faculty members were earning less. In contrast, the earnings profile of women academics born between 1930 and 1934 did not differ greatly from that of women born between 1965 and 1969.

For more information, see the December 8, 2006 issue of *The Daily* on the Statistics Canada's Web site ([www.statcan.ca](http://www.statcan.ca)).

## ■ **From other organizations**

### ■ **Tariff reductions and workers' wages in protected industries**

Microdata on individual Canadian workers are used to investigate the effect on wages of the tariff reductions mandated by the Canada-U.S. Free Trade Agreement (CUSFTA). The findings indicate that relative wages fell in industries that faced the deepest tariff cuts, regardless of whether or not workers belonged to a union. This suggests that CUSFTA reduced the returns to industry-specific human capital for workers in the most heavily affected industries. See "Do tariff reductions affect the wages of workers in protected industries? Evidence from the Canada-U.S. Free Trade Agreement" by James Townsend, *Canadian Journal of Economics*, February 2007, Vol. 40, no. 1, p. 69-92.

### ■ **Employment protections and productivity**

Theory predicts that mandated employment protections may reduce productivity by distorting production choices. Firms facing worker dismissal costs will curtail hiring below efficient levels and retain unproductive workers, both of which should affect productivity.

These theoretical predictions have rarely been tested. This study uses the adoption of wrongful-discharge protections by U.S. state courts over the last three decades to evaluate the link between dismissal costs and productivity.

Drawing on establishment-level data from the Annual Survey of Manufacturers and the Longitudinal Business Database, the study estimates suggest that wrongful-discharge protections reduce employment flows and firm entry rates. Moreover, analysis of plant-level data provides evidence of capital deepening and a decline in total factor productivity following the introduction of wrongful-discharge protections.

This last result is potentially quite important and suggests that mandated employment protections reduce productive efficiency, as theory would suggest.



However, this analysis also presents some puzzles including, most significantly, evidence of strong employment growth following adoption of dismissal protections. See *Do employment protections reduce productivity? Evidence from U.S. States* by David H. Autor, William R. Kerr and Adriana D. Kugler, National Bureau of Economic Research, January 2007, <http://www.nber.org/papers/w12860>.

### ■ ***Income splitting among the self-employed***

Under individual taxation with progressive marginal tax rates, households in which the distribution of income is unequal benefit from attributing income to the lower-income household member. Self-employment provides greater potential to 'split' income because of the absence of reports from a third party.

Using the Canadian experience as a case study, this paper develops a unique estimator of the incidence of income splitting among self-employed couples. The results suggest that the incidence of income splitting among self-employed men in Canada is non-trivial, but no evidence is found that self-employed women attribute income to their spouses. See "Income splitting among the self-employed" by Herbert J. Schuetze, *Canadian Journal of Economics*, November 2006, Vol. 39, no. 4, p. 1195-1220.

### ■ ***Legal environment and high-performance work systems***

This paper compares management flexibility in employment decision making in the United States and Canada through a survey of organizations in Pennsylvania and Ontario that investigates the impact of differences in their legal environments.

Compared with their Ontario counterparts, organizations in Pennsylvania have a higher degree of flexibility in employment outcomes, such as higher dismissal and discipline rates, yet do not experience any greater flexibility or simplicity in management hiring and firing decisions.

One explanation may lie in the finding that organizations in Pennsylvania experience greater legal pressures on decision making, reflecting the generally more intense conflict in United States employment law.

By contrast, high-performance work systems, which some have looked to as a possible management-driven mechanism for enhancing fairness in employment, had more modest effects. See "Flexibility and fairness in liberal market economies: The comparative impact of the legal environment and high-performance work systems" by Alexander J. S. Colvin, *British Journal of Industrial Relations*, March 2006, Vol. 44, no. 1, p. 73-97.

### ■ ***Education and self-employment: Changes in earnings and wealth inequality***

This study looks at the interaction between education and occupation choices and its implication for the relationship between the changes in earnings inequality and the changes in wealth inequality in the United States over the 1983 to 2001 period.

Among households whose head is a college graduate, the ratio of average household earnings between the self-employed and workers increased by 57%. At the same time, the ratio of the average household wealth increased by 137%. This suggests that both earnings and wealth inequality increased over this period. Did this change in relative average earnings lead to the change in relative average wealth?

The paper presents a model of wealth distribution including education and occupation choices, where earnings opportunities are dictated by productivity processes that are education-occupation specific. By calibrating these productivity processes to match the earnings observations separately for 1983 and 2001, the study derives the model-implied changes in wealth inequality between different education-occupation groups of households. This exercise leads to one-third of the change in the relative average wealth between college self-employed and college worker households. See *Education and Self-Employment: Changes in Earnings and Wealth Inequality* by Yaz Terajima, Bank of Canada, November 2006, <http://www.bankofcanada.ca/en/res/wp/2006/wp06-40.html>.

### ■ ***R&D composition and labour productivity growth***

For 16 OECD countries from 1973 to 2000, growth in labour productivity was highly responsive to business research and development (R&D)

expenditures. Increasing business R&D intensity by 10% increased labour productivity in the long run by 2.4 to 5%.

R&D expenditures on higher education also had a significant positive effect on labour productivity growth. Decomposing the sectoral R&D into a pure R&D intensity effect and a sectoral size effect shows that elasticity of labour productivity with respect to these variables differed by sector. The positive size effect dominated the high-tech manufacturer, whereas the intensity effect drove the positive correlation between medium-low-tech manufacturer R&D and labour productivity. See *Research and Development Composition and Labour Productivity Growth in 16 OECD Countries* by Ram C. Acharya and Serge Coulombe, Industry Canada, May 2006, <http://strategis.ic.gc.ca/epic/site/eas-aes.nsf/en/ra01974e.html>.

### ■ ***The role of labour market information for adjustment: International comparisons***

Labour Market Information (LMI) is a policy instrument that governments use to coordinate labour market adjustments. Many approaches are utilized in the provision of this information in OECD countries. This report examines approaches in five OECD countries (Canada, the United Kingdom, Germany, the United States and Australia) to assess their efficiency in facilitating adjustments in labour markets.

The report finds that although Canada has well-developed, labour-market information mechanisms, further efforts should be made by the Canadian government to improve the delivery system. In particular, attempts should be made to simplify information content, improve user awareness, and tailor information to the needs of users in order to facilitate labour market adjustments. See *The Role of Labour Market Information for Adjustment: International Comparisons*, Centre for the Study of Living Standards, December 2006, [http://www.csls.ca/res\\_reports.asp](http://www.csls.ca/res_reports.asp).

### ■ ***Work while in high school: Labour market and educational attainment effects***

Based on Statistics Canada's 1991 School Leavers Survey and its 1995 follow-up, this paper aims to assess the impact of working while in high school both on the probability of graduating from high school and on future wages. The results for both men and women show a strong negative effect of working while in school on the probability of graduation, although the results for females are more sensitive to the specifications used.

There is very little evidence that working while in school had a positive effect on wages at the time of the 1995 interview. See "Work while in high school in Canada: Its labour market and educational attainment effects" by Daniel Parent, *Canadian Journal of Economics*, November 2006, Vol. 39, no. 4, p. 1125-1150.

---

#### Perspectives

---



# Varia

*In this issue: Personal debt in Canada and the U.S.*

## PREVIOUS UPDATES

Work absences – Summer 2006  
Retirement – Summer 2006  
Gambling – Autumn 2006  
Unionization – Autumn 2006  
Minimum wage – Winter 2006

## ECONOMIC AND SOCIAL INDICATORS

Provincial wealth inequality – Spring 2005  
Tourism – Summer 2005  
Residential construction – Autumn 2005  
Education – Winter 2005  
Taxfilers – Spring 2005  
Property taxes – Autumn 2003

## CONTACTS

### Administrative data

*Small area and administrative data*  
Customer Services  
613-951-9720

### Business surveys

*Annual Survey of Manufactures and Logging*  
Client Services  
613-951-9497

*Annual surveys of service industries*  
Patti Dow  
613-951-4612

*Business Conditions Survey of Manufacturing Industries*  
Claude Robillard  
613-951-3507

### Census

*Labour force characteristics*  
Sandra Swain  
613-951-6908

*Income statistics*  
John Gartley  
613-951-6906

### Employment and income surveys

*Labour Force Survey*  
Marc Lévesque  
613-951-4090

*Survey of Employment, Payrolls and Hours*  
Sylvie Picard  
613-951-4003

*Employment Insurance Statistics Program*  
Robert Keay  
613-951-4008

*Major wage settlements*  
Workplace Information Directorate  
(Human Resources and Social Development Canada)  
819-997-3117 or 1 800 567-6866

*Labour income*  
Anna MacDonald  
613-951-3784

*Survey of Labour and Income Dynamics*  
*Survey of Financial Security*  
*Survey of Household Spending*  
Client Services  
613-951-7355 or 1 888 297-7355

### General Social Survey

*Education, work and retirement*  
*Aging and social support*  
*Time use*  
Client Services  
613-951-5979

### Pension surveys

*Pension Plans in Canada Survey*  
Michel Palardy  
613-951-7559

*Quarterly Survey of Trusteed Pension Funds*  
Gregory Sannes  
613-951-4034

### Special surveys

*Survey of Work Arrangements*  
Ernest B. Akyeampong  
613-951-4624

*Adult Education and Training Survey*  
Client Services  
613-951-7608 or 1 800 307-3382

*National Graduates Survey*  
Client Services  
613-951-7608

# Personal debt in Canada and the U.S.

Although the U.S. economy and population are almost 10 times the size of Canada's, the two countries show several similarities. Both have relatively high per-capita income and living standards. Given geographic proximity to the U.S. and a smaller economy, Canada is affected more than other countries by changes in the U.S. economy and in its commercial and financial institutions—especially when such institutions have branches in Canada. Since the U.S. is Canada's major trading partner (taking 81% of total exports in 2005 compared with 64% in 1980, and accounting for 67% and 64% of imports), the U.S. recessions of the early 1980s and 1990s, as well as the boom beginning in the late 1990s, spread to Canada within short order. Both countries have also experienced almost the same rate of inflation—goods and services worth \$1.00 in the respective currencies in 1980 cost \$2.43 in Canada and \$2.37 in the U.S. in 2005.

Population characteristics are also similar. Two-thirds of persons 16 years old and over in each country participate in the labour force. A greater proportion of women were working in 2005 than in 1980. Both populations are aging, the median age increasing between 1980 and 2005 from 28.9 to 38.0 in Canada and from 29.8 to 35.9 in the U.S. Since both countries have large immigrant populations, the median age is affected by the mix of native-born persons, the age of immigrants and emigrants, and fertility and mortality rates by age. Over the last 25 years, the proportion of persons 65 and over has risen from 9.4% to 13.1% in Canada and from 11.2% to 12.3% in the U.S. In both countries, the proportions of persons living alone and female lone-parent families have risen.

*For further information, contact Raj K. Chawla, Labour and Household Surveys Analysis Division. He can be reached at 613-951-6901 or [raj.chawla@statcan.ca](mailto:raj.chawla@statcan.ca).*

## Definitions

### Personal income

Sum of income from labour, unincorporated business, interest and investments, and government transfers received by individuals and non-profit or fraternal organizations.

### Personal disposable income

Personal income less income taxes and other mandatory deductions paid to government.

### Personal consumption expenditure

Sum of expenditure on food and beverages, clothing, housing, furniture, medical care, transportation, communications, and recreation.

### Personal saving

Personal income less consumption expenditure, taxes, and transfers to government, corporations and non-residents.

### Consumer debt

Amounts outstanding on credit cards, vehicle loans, other personal loans, instalment or revolving debts, and unpaid bills.

### Per-capita debt

Total debt (consumer debt plus mortgages) divided by the population. Per-capita disposable income and expenditure are derived in the same fashion. Comparisons of per-capita amounts are in Canadian dollars after converting the U.S. data by purchasing power parities.

### Personal savings rate

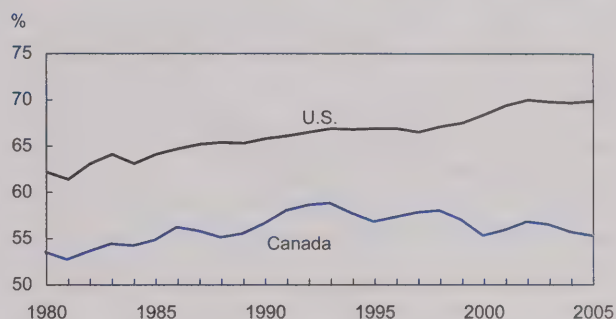
Personal savings as a percentage of personal disposable income.

Age is a key determinant of personal consumption expenditure, income and saving, but spending is also much affected by key monetary variables such as disposable income and access to credit. The following charts highlight various aspects of Canadian and American income, spending, saving and debt over the last 25 years.



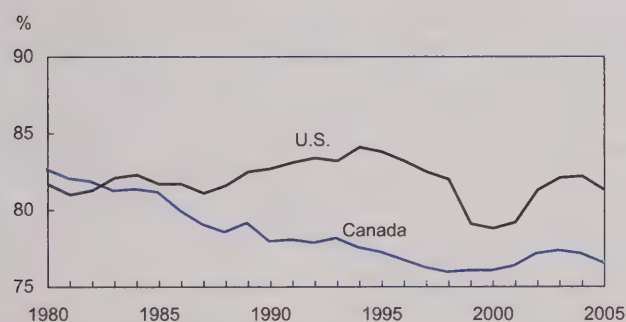
## Personal consumption expenditure constitutes a larger share of GDP in the U.S.

Consumer spending is a key contributor to a country's economic health. Consumer spending as a percentage of GDP is much lower in Canada, ranging from 52.8% to 58.9% over the last 25 years, compared with 61.4% to 70.0% in the U.S. In other words, consumer spending has boosted the economy more in the U.S. than in Canada.



Sources: Statistics Canada, National Income and Expenditure Accounts; U.S. Department of Commerce

## Canadians pay more income taxes and transfers to government



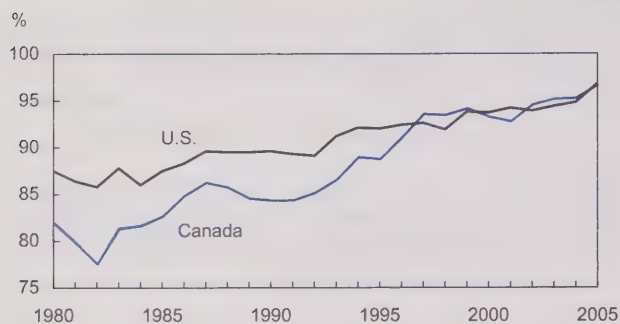
Sources: Statistics Canada, National Income and Expenditure Accounts; U.S. Department of Commerce

Even though both countries have a progressive income tax system, their marginal tax rates, methods of taxation, and allowable deductions vary considerably. In Canada, a relatively larger share of personal income goes for federal and provincial income taxes, Canada or Quebec Pension Plan contributions, and Employment Insurance premiums (17.3% in 1980 and 23.4% in 2005). Americans, on the other hand, paid 18.3% and 18.7% of their income for federal and state income taxes, social security contributions, and unemployment insurance.<sup>1</sup> The gap between total and disposable income has widened over time in Canada while remaining almost unchanged in the U.S. However, the mix of deductions in the U.S. has changed considerably: Income taxes accounted for 79.4% of deductions in 1980 compared with 57.7% in 2005.

### Note

1 The higher rate of transfers to governments in Canada can be attributed partly to the funding of universal health care and security benefits. In the U.S., Medicaid is available only to people with limited income, while Medicare is available to those 65 and older.

## Canadians and Americans spend a similar proportion of their income



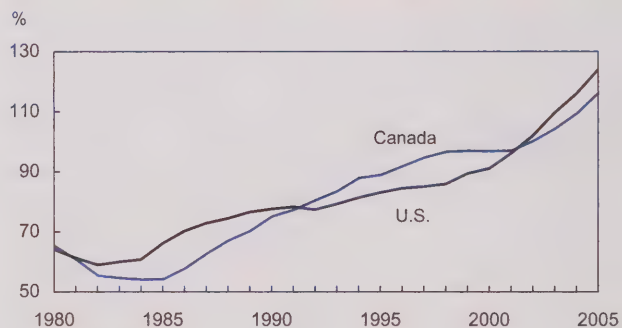
Sources: Statistics Canada, National Income and Expenditure Accounts; U.S. Department of Commerce

Until the mid 1990s, both Canadians and Americans managed to spend less than their disposable income. However, from 1996 onwards, they spent almost all of it, leaving very little for saving.

## Both Canadians and Americans have increased their debt-to-income ratios

Credit can be used to meet regular or unexpected consumption needs, or even to acquire assets. Debt load, measured by the ratio of total debt to disposable income was almost the same for Canadians and Americans at the beginning of the 1980s. After that, they parted ways: Americans had the greater debt load between 1983 and 1991 and Canadians between 1992 and 2000. From 2001, debt grew steadily in both countries and by 2002 had surpassed disposable income. By 2005, for each dollar of disposable income, Canadians owed \$1.16 and Americans \$1.24.

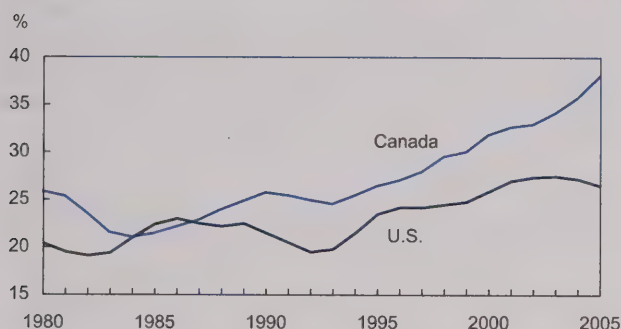
Some of the increased indebtedness between 2001 and 2005 may be attributed to relatively low rates of interest, easy credit through home equity loans, and increased limits and incentives on credit cards issued by competing financial institutions.



Sources: Bank of Canada, Public Information Service; U.S. Federal Reserve, Financial and Business Statistics



## Canadians use more consumer credit for their personal spending



Sources: Bank of Canada, Public Information Service; U.S. Federal Reserve, Financial and Business Statistics

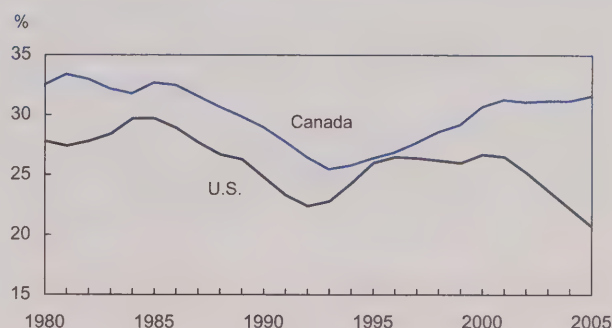
Between 1980 and 2005, consumer credit represented between 21 and 38 cents of each dollar of personal spending in Canada. In the U.S., the amount was between 19 and 27 cents. Since 1986, when the Reagan administration cancelled tax deductibility for interest paid on consumer loans, Americans have been using less of this kind of credit. Consequently, since 1988, the gap between the U.S. and Canada in the use of consumer credit has widened.

Non-homeowners in both countries, who have neither mortgage debt nor access to home-equity line of credit, can increase limits on their credit cards or use personal loans to finance unexpected needs or other budgetary shortfalls.

## Consumer credit is still a relatively small share of total household debt in both countries

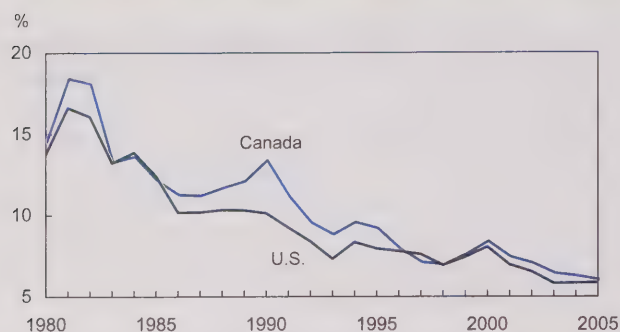
In Canada, consumer credit fluctuated between 26% and 33% of total household debt over the 1980-to-2005 period. These proportions indicate two distinct trends: a steady fall between 1985 and 1993 and a rise thereafter. A drop in the share of consumer credit means an increase in the share of mortgages. The increase in mortgage debt during this period in Canada was largely due to baby boomers purchasing their first home. However, the increasing use of consumer credit since 1992 is likely due to a combination of factors, including stagnant incomes in the 1990s, easier credit in the early 2000s, and changing demographics and lifestyles.

With Americans also experiencing stagnant incomes in the 1990s, their use of consumer credit rose between 1992 and 1996. Tax deductibility for mortgage interest on the principal residence may encourage Americans to mortgage or re-mortgage their home, using such funds for consumption, investment, home renovation, paying off loans, or some other purpose.



Sources: Bank of Canada, Public Information Service; U.S. Federal Reserve, Financial and Business Statistics

## The conventional mortgage rate is usually higher in Canada than in the U.S.



Note: Five-year mortgage rate charged by banks in Canada; rate charged by institutions on commitments for fixed-rate, first mortgages in the U.S.

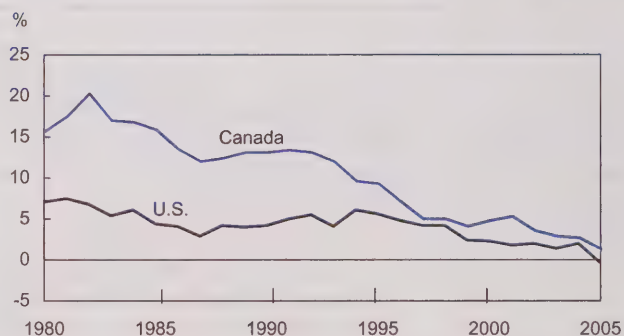
Sources: Bank of Canada, Public Information Service; U.S. Federal Reserve, Financial and Business Statistics

Because of the size of the market and competition among financial institutions and private lenders, the conventional five-year mortgage rate in the U.S. is usually lower than in Canada. The gap in rates was at a maximum during the economic recessions of 1981–1982 and 1989–1991. In both countries, mortgages were highest in 1981—18.4% in Canada and 16.6% in the U.S. By 2005, they had dropped to less than 6%. Since 1996, conventional mortgage rates in the two countries have been quite close (higher in Canada by half a percentage point or less).

## The personal savings rate has been falling

While the personal savings rate in Canada has consistently been higher than in the U.S., rates in both countries have been falling. Rates peaked at 20.2% in Canada in 1982 and at 7.5% in the U.S. in 1981. The high rates of interest during those years likely spurred saving and investing; on the other hand, those who borrowed paid dearly. By the late 1990s, however, the two rates were converging, reaching 1.2% in Canada and -0.4% in the U.S. in 2005.

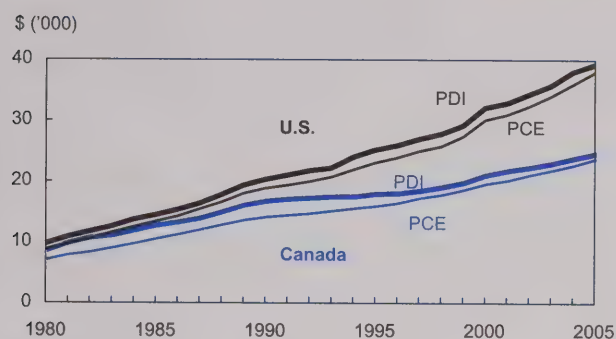
The reasons for the decline are the same in both countries: more personal consumption and higher mandatory transfers (income taxes and contributions for security programs). In 1982, Canadians spent 63.4 cents of each income dollar on consumption and 20.0 cents on transfers; Americans spent 73.7 cents and 20.7 cents. By 2005, Canadians were spending 74.0 cents on consumption and 25.1 cents on transfers, Americans 78.6 cents and 21.7 cents.



Sources: Statistics Canada, National Income and Expenditure Accounts; U.S. Department of Commerce



## On a per-capita basis, consumption expenditure outpaced disposable income in both Canada and the U.S.



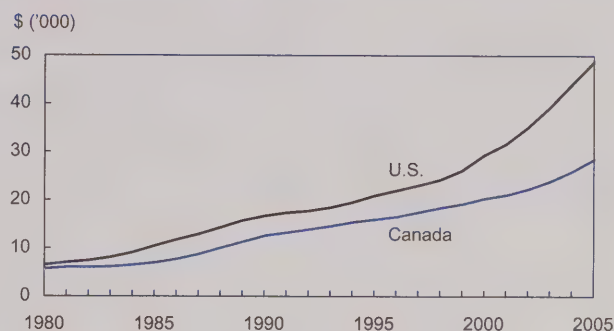
Note: Amounts in Canadian dollars after converting U.S. data on personal disposable income (PDI) and personal consumption expenditure (PCE) based on purchasing power parity.

Sources: Statistics Canada, Demography Division, National Income and Expenditure Accounts; U.S. Bureau of the Census and Department of Commerce

Over the 1980-to-2005 period, per capita consumption expenditure in Canada more than tripled from \$6,870 to \$23,560, while disposable income rose proportionally less—\$8,390 to \$24,400 (2.9 times). In the U.S., expenditures and disposable income rose more steeply—from CAN\$8,770 to \$37,980 (4.3 times) and from CAN\$9,710 to \$39,260 (4.0 times). The disparity between Canada and the U.S. in both per-capita spending and disposable income has increased and, as consumer spending has outgrown disposable income, both Canadians and Americans have had to finance their spending through credit.

## Per capita, Americans have more debt than Canadians

The per-capita debt of Canadians has risen 5.2 times over the last 25 years, from \$5,470 in 1980 to \$28,390 in 2005. For Americans, it jumped 7.5 times, from CAN\$6,510 to \$48,700. Per-capita debt has been increasing steadily in both countries, but the disparity between the two countries, almost non-existent at the beginning of the 1980s, began to increase sharply from 1999 onwards. This is partly due to Americans opting to take on more mortgage debt (including refinancing). Increasing mortgage debt for refinancing purposes or taking out home-equity loans implies that homeowners in both countries are using their homes as a source of cash to finance their spending rather than as an investment.

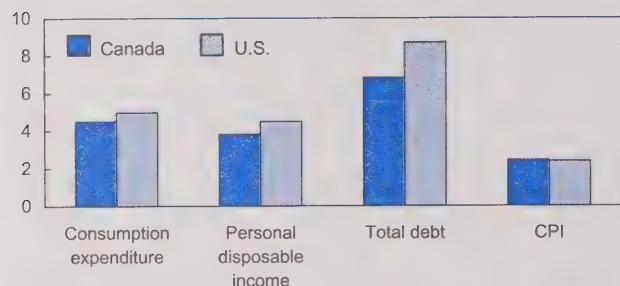


Note: Amounts in Canadian dollars after converting U.S. data on total household debt based on purchasing power parity.

Sources: Statistics Canada, Demography Division; Bank of Canada, Public Information Service; U.S. Federal Reserve, U.S. Bureau of the Census and Financial and Business Statistics

## In both countries, total household debt outgrew consumer spending as well as disposable income

2005/1980 ratio



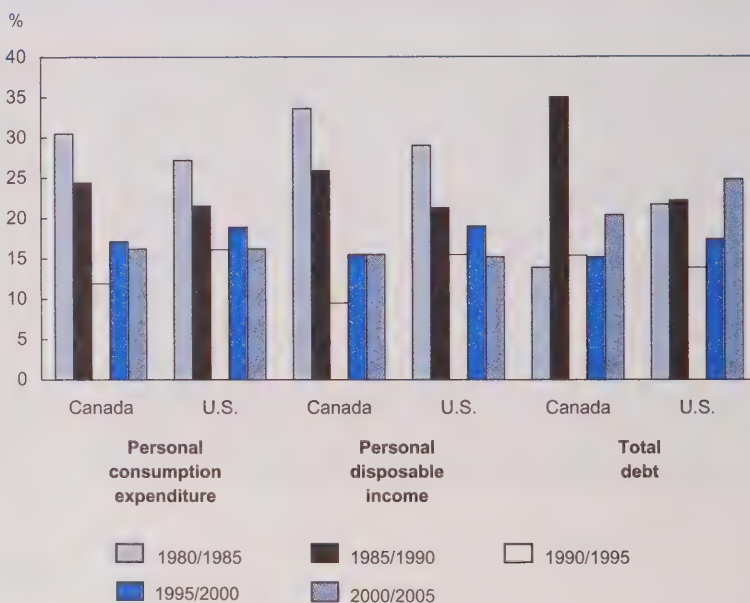
In terms of aggregates in their respective currencies, household debt rose in Canada from \$134 billion in 1980 to \$916 billion by 2005 (6.8 times), and in the U.S. from \$1.3 trillion to 11.2 trillion (8.6 times). Even though inflation was almost the same in both countries, consumer spending and disposable income increased less in Canada. Consumer spending, for instance, rose from \$168 billion to \$760 billion in Canada and from \$1.8 trillion to \$8.7 trillion in the U.S.

Sources: Statistics Canada, National Income and Expenditure Accounts; Bank of Canada, Public Information Service; U.S. Federal Reserve, U.S. Department of Commerce and Financial and Business Statistics

## Growth in household debt, consumer spending and disposable income varied with economic activity in both Canada and the U.S.

Of the total growth in household debt between 1980 and 2005, 35.0% occurred between 1985 and 1990 in Canada compared with 22.2% in the U.S. This was a period when baby boomers in Canada were likely purchasing their first home. The largest growth in debt for Americans (24.8%) occurred between 2000 and 2005 compared with 20.4% for Canadians. This was a period of economic prosperity with lower rates of unemployment and inflation accompanied by lower interest rates and easy access to credit.

Since consumer spending and disposable income (in current dollars) are highly sensitive to the rate of inflation, they showed relatively more growth during the 1980-to-1985 period of high inflation—30.5% of the growth in consumer spending in Canada and 27.2% in the U.S. During the 2000-to-2005 period of low inflation, these rates fell to 16.2% in both Canada and the U.S. A similar pattern is seen in the overall growth of disposable income.



Sources: Statistics Canada, National Income and Expenditure Accounts; Bank of Canada, Public Information Service; U.S. Federal Reserve, U.S. Department of Commerce and Financial and Business Statistics





# CANADIAN Economic Observer

Statistics Canada's **Canadian Economic Observer (CEO)** delivers the most thorough, monthly economic briefing available. Each month as a subscriber you receive current and reliable information to help you stay abreast of the economic performance of the country, your province and the specific economic sectors in which you're interested.

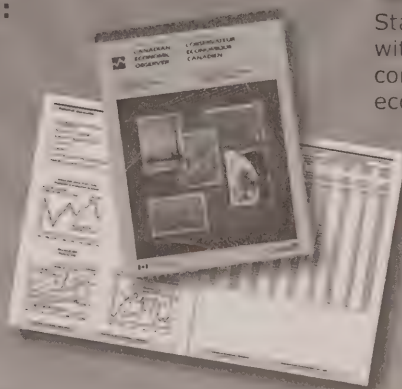
**CEO is presented in two parts:**

## CEO—The Magazine

- Sector-by-sector analysis of economic indicators
- Developments in provincial and international economies
- Highlights of economic events in Canada and around the world
- A summary table of current economic conditions
- Feature articles spotlighting major issues and industry sectors

## CEO—The Statistical Summary

- Detailed figures in tabular form on markets, prices, industrial sectors, international and domestic trade, and much more
- More than 1,100 economic indicators covering: market sectors, imports, exports, demographics, unemployment, and much more
- User-friendly tables and graphs



## What's in a typical issue?

Statistical charts and tables are blended with expert commentary to provide a quick, concise, wide-ranging overview of the economy.

## NEW – CEO now available in an electronic format!

Enjoy the complete print edition in an electronic format (PDF) for 25% less than the cost of the print version. Subscribing to the electronic format also gives you access to our archives of articles. Visit our website at [www.statcan.ca](http://www.statcan.ca) to download it today!

## Your annual subscription to the CEO print version includes:

- **12 issues of Canadian Economic Observer**, your source for the latest trends, analyses and data on Canada's economy.
- **A FREE edition of CEO's Annual Historical Supplement**—a fact-filled compendium, putting at your fingertips the economic trends that have characterized Canada's development from as far back as 1926 right up to the present... all in one easy-to-use volume.

## Subscribe to the Canadian Economic Observer

Canadian Economic Observer (Cat. No. 11-010-XPB)

**Order** 1 year subscription: \$243.00

**Order** 2 year subscription: \$388.80 **Save 20%**

**Order** 3 year subscription: \$510.30 **Save 30%**

In Canada, please add **either** GST and applicable PST **or** HST. Print version: no shipping charges for delivery in Canada. For shipments to the United States, please add \$6 per issue or item ordered. For shipments to other countries, please add \$10 per issue or item ordered. (Federal government clients must indicate their IS Organization Code and IS Reference Code on all orders.)

## Use one of four convenient ways to order:

**CALL** Toll-free 1 800 267-6677

**FAX** Toll-free 1 877 287-4369

**MAIL** Statistics Canada, Finance,  
6-H, R.H. Coats Building, Tunney's Pasture,  
Ottawa, Ontario K1A 0T6

**E-MAIL** [infostats@statcan.ca](mailto:infostats@statcan.ca)

[www.statcan.ca](http://www.statcan.ca)  
Visit our website

# PERSPECTIVES

ON LABOUR AND INCOME

## To keep up with ...

- the distribution of income and trends in wages in the country
- the education levels and the training of the labour force in Canada
- updates on research under way in the labour and income field
- the availability of new income and labour market data

## ... you need

**PERSPECTIVES ON LABOUR AND INCOME** (Catalogue no. 75-001-XPE) from Statistics Canada.

A yearly subscription to **Perspectives on Labour and Income** (four issues) costs just \$63.

Mail your order to Statistics Canada, Finance Division, R.H. Coats Bldg., 6th floor, 100 Tunney's Pasture Driveway, Ottawa, Ontario K1A 0T6. Or fax 1 877 287-4369 (Canada and United States) or call 1 800 267-6677 (Canada and United States) and use your VISA or MasterCard, or e-mail [infostats@statcan.ca](mailto:infostats@statcan.ca)





# PERSPECTIVES

## ON LABOUR AND INCOME

**SUMMER 2007**

Vol. 19, No. 2

■ THE BUSY LIVES  
OF TEENS

■ PAYDAY LOANS

■ FUELLING THE  
ECONOMY

■ GDP AND EMPLOYMENT  
GROWTH

■ LITERACY AND  
EMPLOYABILITY

■ VARIA  
*Work absence rates*  
*Gambling*



Statistics Canada  
Statistique Canada

Canada

## *At Your Service...*

### How to obtain more information

Specific inquiries about this product and related statistics or services should be directed to: *Perspectives on Labour and Income*, 9 A-6 Jean Talon, 170 Tunney's Pasture Driveway, Statistics Canada, Ottawa, Ontario, K1A 0T6 (telephone: (613) 951-4628; e-mail: [perspectives@statcan.ca](mailto:perspectives@statcan.ca)).

For information on the wide range of data available from Statistics Canada, you can contact us by calling one of our toll-free numbers. You can also contact us by e-mail or by visiting our website [www.statcan.ca](http://www.statcan.ca).

National inquiries line	1 800 263-1136
National telecommunications device for the hearing impaired	1 800 363-7629
Depository Services Program inquiries	1 800 700-1033
Fax line for Depository Services Program	1 800 889-9734
E-mail inquiries	<a href="mailto:infostats@statcan.ca">infostats@statcan.ca</a>
Website	<a href="http://www.statcan.ca">www.statcan.ca</a>

### Ordering/subscription information

This product can be ordered by

- telephone (Canada and United States) 1 800 267-6677
- fax (Canada and United States) 1 877 287-4369
- e-mail [infostats@statcan.ca](mailto:infostats@statcan.ca)
- mail Statistics Canada  
Finance Division  
R.H. Coats Bldg., 6th Floor  
100 Tunney's Pasture Driveway  
Ottawa, Ontario K1A 0T6
- In person from authorised agents and bookstores

When notifying us of a change in your address, please provide both old and new addresses.

### Standards of service to the public

Statistics Canada is committed to serving its clients in a prompt, reliable and courteous manner and in the official language of their choice. To this end, the Agency has developed standards of service. To obtain a copy of these standards, please contact Statistics Canada toll free at 1 800 263-1136. They are also published on [www.statcan.ca](http://www.statcan.ca) under About Statistics Canada > Providing services to Canadians.



# PERSPECTIVES

ON LABOUR AND INCOME

## ■ Departments

- 3 Highlights
- 53 What's new?
- 56 In the works
- 57 Varia
  - Work absence rates*
  - Gambling*

**Perspectives on Labour and Income**  
(Catalogue no. 75-001-XPE; aussi disponible en français: *L'emploi et le revenu en perspective*, n° 75-001-XPFP au catalogue) is published quarterly by authority of the Minister responsible for Statistics Canada.  
©Minister of Industry 2007. ISSN: 0840-8750.

PRICE: CAN \$20.00 per issue, CAN \$63.00 for a one-year subscription.

### Shipping charges outside Canada:

	Single issue	Annual subscription
United States	CAN \$ 6.00	CAN \$24.00
Other countries	CAN \$10.00	CAN \$40.00

All prices exclude sales taxes.

All rights reserved. This product cannot be reproduced and/or transmitted to any person or organization outside of the licensee's organization.

Reasonable rights of use of the content of this product are granted solely for personal, corporate or public policy research, or for educational purposes. This permission includes the use of the content in analyses and the reporting of results and conclusions, including the citation of limited amounts of supporting data extracted from this product. These materials are solely for non-commercial purposes. In such cases, the source of the data must be acknowledged as follows: Source (or "Adapted from" if appropriate): Statistics Canada, year of publication, name of product, catalogue number, volume and issue numbers, reference period and page(s). Otherwise, users shall seek prior written permission of Licensing Services, Client Services Division, 100 Tunney's Pasture Driveway, Statistics Canada, Ottawa, Ontario, K1A 0T6.

Indexed in the *Canadian Index*, *Canadian Periodical Index*, *P.A.I.S. International*, *Sociological Abstracts*, *Econlit*, *Canadian Business and Current Affairs* and *Employee Benefits Infosource*. Also indexed in French in *L'Index de l'Actualité* and *Point de Repère*.

## ■ Articles

### 5 The busy lives of teens

*Katherine Marshall*

Early training and skills development can open up opportunities and choices. Apart from schooling, teenagers can also begin to build up their human capital by working at a paid job, participating in volunteer activities, and even doing household chores. But an inordinate amount of time spent on unpaid and paid work activities could lead to unhealthy levels of stress and reduction in well-being, and negatively affect education outcomes. This article examines trends in the number of hours teenagers spend daily on education-related activities, paid work and housework.

### 16 Payday loans

*Wendy Pyper*

Payday loans are part of the growing alternative consumer credit market in Canada. These loans are for relatively small amounts (\$100 to \$1,000) and are short-term, with repayment usually made on or before the next payday. Although the convenience of payday loans makes them attractive, concerns have been raised about questionable practices within the industry, including high borrowing costs, insufficient disclosure of contract terms, and unfair collection practices. Who uses payday loans and why?

### 25 Fuelling the economy

*Cara Williams*

One of the hottest commodities today is a barrel of oil. And Canada, with the second largest proven oil reserves in the world (after Saudi Arabia), is well positioned as one of the few countries outside OPEC with significant prospects for production growth. A look at economic activity and employment in the oil and gas industry, from exploration to retail.



# PERSPECTIVES

ON LABOUR AND INCOME

## Managing Editor

Henry Pold  
613-951-4608  
henry.pold@statcan.ca

## Editors

Sheila Kulka  
Lahouaria Yssaad

## Data Services

Joanne Bourdeau  
Laura Fraser

## Production and Composition

Ann Trépanier  
Annamma John

## Printing

Dissemination Division

## Cover Art

Jeffrey Lapierre

## Symbols

The following standard symbols are used in Statistics Canada publications:

- not available for any reference period
- not available for a specific reference period
- ... not applicable
- p preliminary
- r revised
- x confidential
- E use with caution
- F too unreliable to be published

The paper used in this publication meets the minimum requirements of American National Standard for Information Sciences – Permanence of Paper for Printed Library Materials, ANSI Z39.48 – 1984.

## 34 GDP and employment growth

*Philip Cross*

A variety of factors contributed to the slowdown of output growth relative to employment growth during 2006. However, 2006 was not unique—GDP and job growth rates have converged frequently in recent years, including most of 2002 and 2003. After reviewing the sources of last year's productivity slowdown by industry, the negative impact of labour shortages on the quality of labour, especially in western Canada, is examined.

## 44 Literacy and employability

*Ross Finnie and Ronald Meng*

The effects of literacy and numeracy skills on the employability and incomes of high school dropouts are compared with those of graduates. Regression analysis based on the demographic characteristics and family backgrounds of early school leavers indicates that increasing proficiency in literacy and numeracy significantly improves the probability of being employed, the number of hours worked, and income.

## Back Issues: *Did you miss something?*

*Don't worry!* Back issues of **Perspectives on Labour and Income** are available.

Feature articles in these issues include:

- |                    |  |
|--------------------|--|
| <b>Spring 2007</b> | Revisiting wealth inequality • Work hours instability • Canada's unemployment mosaic, 2000 to 2006 • The aboriginal labour force in Western Canada • Young pensioners • Defining retirement • <i>Varia: Personal debt in Canada and the U.S.</i> |
| <b>Winter 2006</b> | The core-age labour force • Earnings instability • Training through the ages • Balancing career and care • Measuring housing affordability • <i>Varia: Minimum wage • Cumulative index 1989-2006</i>   |
| <b>Autumn 2006</b> | Converging gender roles • Wives as primary breadwinners • Education and earnings • Is the workplace becoming safer? • The GST credit • Increased work stoppages • Fact-sheets: <i>Unionization, Gambling</i>                                     |
| <b>Summer 2006</b> | Does it pay to go back to school? • Who gets student loans? • Cracking the RRSP nest egg • On sick leave • Screening job applicants • Unemployment since 1971 • <i>Varia: Work absences, Retirement</i>  |

For more information, contact **Statistics Canada, Dissemination Division, Circulation Management, 100 Tunney's Pasture Driveway, Ottawa, Ontario K1A 0T6**. Or, call toll free **1 800 267-6677**.

## Perspectives on Labour and Income

*The quarterly for labour market and income information*



# Highlights

## *In this issue*

### ■ The busy lives of teens ... p. 5

- In 2005, school-attending teens aged 15 to 19 averaged a 50-hour workweek (school, paid work and housework), virtually the same as adults aged 20 to 64 doing the same activities.
- On any given day, 60% of teens spent 2.3 hours on homework. Teens were significantly more likely to do homework if both parents had a university education or if they lived in an intact two-parent family; they were significantly less likely to do so if they were boys with Canadian-born parent(s) or if they had a paid job with long hours (20 or more).
- Teen involvement in paid work has increased over the past 20 years. In 2005, one in five reported working an average of five hours on the day they were interviewed. Paid work was more common on weekends and among teens aged 18 and 19.
- Four in 10 teenagers did some housework daily, averaging about an hour. Influencing factors included family type, cultural background, and community size.
- Significantly more teens with little or no stress (related to time and unpaid and paid labour) reported being very happy and/or very satisfied with life than teens with high stress (72% versus 45%).

### ■ Payday loans ... p. 16

- In 2005, less than 3% of families (353,300) reported having taken out a payday loan within the previous three years. Age was a key factor. Young families were three times more likely to have used payday loans than those aged 35 to 44, after controlling for other family characteristics.
- Families with \$500 or less in their bank account were significantly more likely (2.6 times) to have used payday loans than those with between \$2,001

and \$8,000. Families behind in bill or loan payments were more than four times as likely to have used payday loans.

- After controlling for other family characteristics, families without a credit card were more likely to have had a payday loan. Those who had been refused a credit card were over three times as likely.
- Almost half of families who used payday loans had no one to turn to in the face of financial difficulty, significantly higher than non-users (32%). More than one-quarter reported that they could not handle an unforeseen expenditure of \$500, almost four times the rate for non-users (7%). Nearly half of families who used payday loans could not handle an expense of \$5,000 (17% for non-users).

### ■ Fuelling the economy ... p. 25

- In 2006, the contribution to GDP of all sectors of the oil and gas industry exceeded \$40 billion (1997 dollars), and direct employment totalled almost 300,000.
- In the upstream sector (exploration and extraction), production and investment have become driving forces in the economy. Between 1997 and 2005, investment increased almost 140% to \$45.3 billion, and the value of oil and gas production increased over 245% to \$108 billion.
- Jobs in the oil and gas industry are much less likely to be unionized than other jobs (12% versus 32%). They are also more likely to be full-time (88% versus 82%) and held by men (72% versus 53%).
- Employment in oil and gas extraction increased 43% between 1997 and 2006 (from about 55,000 to 79,000). Average hourly earnings in 2006 were \$30.36.

- Downstream employment varied dramatically. Of the 117,000 workers, 63% worked at gas stations where hourly earnings were about \$8.60. For the 14% in petroleum and coal products manufacturing, earnings were significantly higher at just over \$28 an hour.

## ■ GDP and employment growth

... p. 34

- Typically, output growth exceeds employment growth by over 1%, reflecting the generally upward trend of productivity. But what happened in 2006 was a slowdown in output and an increase in employment.
- Several transitory factors (such as weather, unusual events, production disruptions) help explain this convergence of growth in output and employment—a phenomenon that is hardly unique to 2006.
- Most of the downturn in output per employee originated in goods-producing industries, almost all of which posted lower productivity during the first three quarters of 2006.
- Output per hour worked declined by nearly 10% in the resource sector, by itself shaving a full 1% from productivity growth last year. Mining, oil and gas led this drop, as output grew slowly while employment raced ahead by over 10%, the most of any industry in 2006.
- As well, oil production was hampered by a number of disruptions. But given the shortage of labour in the oil patch, firms kept their workers on the payroll during these interruptions.
- With tight labour markets and shortages, employers had to turn to the youngest and oldest workers—who are the least productive—and spend more time training them. In Alberta, people with no more than high school education accounted for over half of all employment growth in 2006.

## ■ Literacy and employability

... p. 44

- The functional literacy scores of both men and women who dropped out of high school were significantly below those of graduates. In addition,

dropouts reported a weaker attachment to the labour market and lower average incomes than their more educated counterparts.

- Among both graduates and non-graduates, literacy scores were consistently higher for women than for men in all employment categories.
- Having learning difficulties as a child increased the probability of leaving high school early by 19 percentage points for both sexes. The likelihood of dropping out was also significantly higher for Aboriginal persons—14 points higher for men and 13 for women.
- Having a disability did not directly influence the employability of men who had dropped out of high school, but it had a significantly adverse effect on women in terms of current and full-time employment, as well as the number of weeks worked.
- Among men, increased literacy exerted a strong positive effect on incomes for both graduates and dropouts, while the number of years of education was highly significant for dropouts only. For women, the effect of literacy was significant for graduates but not dropouts, while the return to years of education was highly significant for both.

## ■ What's new?

... p. 35

### ■ From Statistics Canada

Income of Canadians  
Immigrants to Canada  
Labour productivity  
Low income and university attendance

### ■ From other organizations

International patterns of union membership  
Globalization, human resource practices and innovation  
Work environments in fixed-term and permanent jobs in Finland and Canada

### Perspectives



# The busy lives of teens

Katherine Marshall

**H**igh school students are future members of the core labour force. Many of them understand that to achieve success they must do well in school and pursue some form of postsecondary education.<sup>1</sup> Apart from schooling, teenagers can increase their human capital in other ways, such as working at a paid job, participating in volunteer activities, and even doing household chores, which can provide many useful basic skills. Early training and skills development, in and out of school, can open up opportunities and choices in terms of attending university or finding employment. It is well accepted that investment in personal human capital increases the chances of finding meaningful, productive and higher-earning employment (Keeley 2007).

Time invested in these various skill-enhancing activities can be beneficial in other ways as well. For example, youth earnings can provide some financial aid toward a postsecondary education, and participation in housework can help alleviate some of the household responsibilities of busy parents. On the other hand, an inordinate amount of time spent on unpaid and paid work activities could lead to unhealthy levels of stress and reduce well-being, negatively affecting education outcomes.

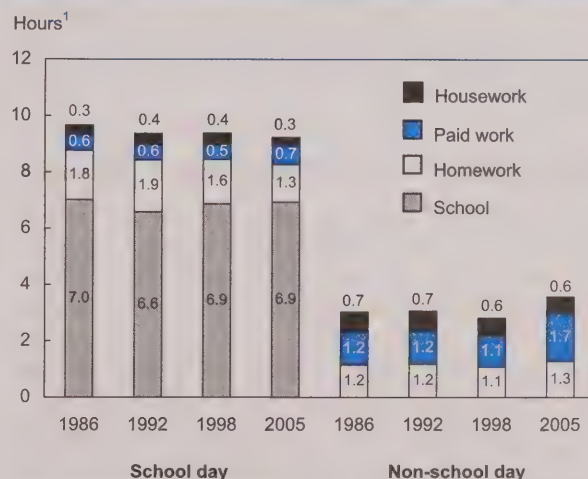
This article examines trends in the average number of daily hours teenagers spend on education-related activities, paid work and housework. It also examines in detail time differences by sex and other socio-economic characteristics of teens in 2005, as well as looking at indicators of stress related to paid and unpaid workloads. The analysis is based on time-use data that allow a detailed examination of one 24-hour day (See *Data sources and definitions*). Some information is also provided on annual volunteer work (see *Volunteering*). Although the intrinsic value of the unpaid and paid work activities surveyed cannot be determined

(for example, the quality of the schooling or part-time work experience), time spent on these activities can be viewed as a positive initiative in skill development.

## Most teens put in long days

Over the past 20 years, a typical school day for a teenager aged 15 to 19 has averaged about 7 hours of school attendance, and another 2.5 hours of homework, paid work and housework (Chart A). Students also do about 3 hours of homework, paid work and housework per day on weekends and other non-school days. Mainly because of the increase in paid work since 1998, total productive work increased to 3.5 hours on weekends in 2005. Despite the stereotypical image of lounging, sleeping, nonchalant teenagers, many of them carry a heavy load. In fact, compared with nine other OECD countries with time-use sur-

**Chart A Teenagers do much more than go to school**



<sup>1</sup> Average hours spent per day for the population aged 15 to 19.  
Source: Statistics Canada, General Social Survey

Katherine Marshall is with the Labour and Household Surveys Analysis Division. She can be reached at 613-951-6890 or [katherine.marshall@statcan.ca](mailto:katherine.marshall@statcan.ca).

veys, Canadian teens ranked first in terms of average hours spent on unpaid and paid labour during the school week (Table 1). Furthermore, averaged over the week (school and non-school days), teens did an average of 7.1 hours of unpaid and paid labour per day in 2005—virtually the same as the 7.2 hours adult Canadians aged 20 to 64 spent on the same activities. Only the distribution was different for adults, with an average of 8.3 hours of unpaid and paid work being done on weekdays, and 4.5 hours on weekends.

Generally, girls spend more time than boys on unpaid and paid work, particularly on weekends. For example, in 2005, boys put in an average of 9.1 hours on school days and 3.1 hours on weekends, while girls did 9.3 hours and 4.2 hours respectively. Averaged over the whole week, teenage girls did significantly more unpaid and paid work per day than boys—7.5 versus 6.7 hours.

### Homework takes time

The demands of high school curricula and university entrance requirements render homework essential for most students. Doing homework on a daily basis remained relatively stable over the four years examined, with roughly 70% of teenagers doing some each day on school days and 40% doing some on weekends. After school attendance, homework is the second most time-consuming, work-related activity for teens. Time spent on it has edged down on school days (1.3 hours in 2005) and up on non-school days (also to 1.3 hours), totalling about 9.2 hours per week. But as in other years, girls did more—10.3 hours compared with 8.1 hours for boys (Chart B). Interestingly, in almost all other industrialized countries, girls spend more time than boys doing homework (Zuzanek and Mannell 2005, 388).

### Paid work increasing among teen girls

The average time spent working at a paid job in 2005 reached 0.7 hours on school days and 1.7 hours on non-school days. This represents about 7.6 hours per week, an increase of two hours from the previous three periods. The daily paid-work participation rate also edged up slightly, mainly because of higher weekend rates—28% reported working on a non-school day in 2005, compared with 20% in 1986. In 2005, girls for the first time had a higher daily employment rate than boys (23% versus 19%). These employment trends are similar to those found with the Labour Force Survey (LFS), which asks all respondents whether they did any

**Table 1 Time spent on unpaid and paid work on school days for those aged 15 to 19**

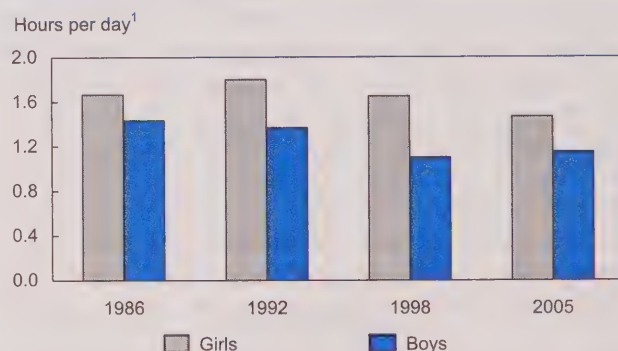
	Total time	School related	Paid work	Domestic work <sup>1</sup>
	Hours:minutes			
Canada (1998)	9:45	8:31	:32	:43
Belgium (1999)	9:43	8:46	:13	:44
United States (2003)	9:10	7:53	:41	:36
Australia (1997)	9:08	8:01	:23	:44
Netherlands (2000)	8:55	7:34	:40	:41
United Kingdom (2000)	8:50	7:46	:22	:42
France (1998)	8:42	8:01	:09	:32
Norway (2000)	8:37	7:19	:17	1:01
Germany (2001/02)	8:29	7:23	:08	:58
Finland (1999/00)	8:16	7:11	:08	:57

<sup>1</sup> Includes family care.

Source: Time use data collected by national statistical agencies (Zuzanek 2005).

work for pay during the reference week.<sup>2</sup> In 2006, 40% of girls and 34% of boys aged 15 to 19 who were attending school reported having a job sometime during the LFS reference week, with usual weekly hours of 13.6 and 14.5 respectively (Chart C). Both surveys show teenage girls now surpassing boys in terms of employment rates and a convergence of average hours worked.<sup>3</sup> These trends suggest that the difference

**Chart B Total homework hours relatively stable, but boys still lag behind girls**

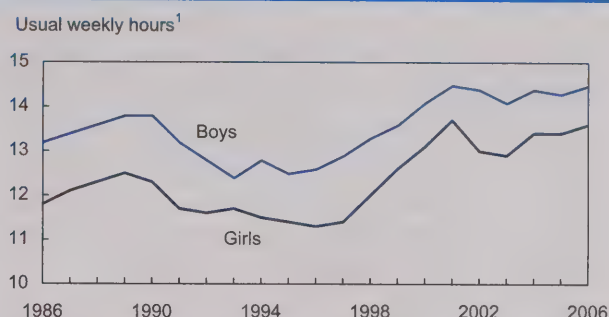
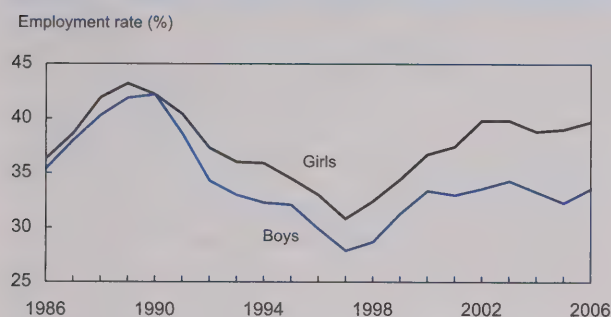


<sup>1</sup> Averaged over seven days for the population aged 15 to 19.  
Source: Statistics Canada, General Social Survey



**Chart C Since the 1990s, school-attending teen girls have been more likely to be employed than boys...**

**...but boys with jobs work on average one hour more per week than girls**



<sup>1</sup> For those employed.

Source: Statistics Canada, Labour Force Survey

between women's and men's labour market activity may also continue to narrow as this younger generation enters the labour force on a permanent basis.

### As with their parents, less housework but more equality

Overall, daily housework has trended downward. Daily participation in housework was 39% in 2005 compared with 43% in 1986, while the average time spent doing it dropped from 28 minutes to 23 (Table 2).<sup>4</sup> Although parents may not think that 23 minutes (averaged over 7 days) is much of a contribution relative to the 118 minutes they put in, it still represents 16% of total housework time.

Overall, adults have increased their daily participation in housework, but reduced the time spent on it. A significant decrease in the daily participation rate and in time spent by women has been more than offset by an increase in both for men (Marshall 2006). Interestingly, this convergence is being mirrored in

**Table 2 Participation rate and average time spent on household chores, population aged 15 to 19**

	All house- work	Core housework					Non-core house- work <sup>1</sup>
		Total	Meal prepa- ration	Meal clean- up	Indoor cleaning	Laun- dry	
Daily participation rate (%)							
<b>1986</b>							
Both sexes	43	39	23	19	13	F	8 <sup>E</sup>
Girls	53	52	30	27	18 <sup>E</sup>	F	F
Boys	33*	28*	17* <sup>E</sup>	12* <sup>E</sup>	9* <sup>E</sup>	F	11 <sup>E</sup>
<b>2005</b>							
Both sexes	39	35	26	3	9	F	9
Girls	43	39	27	4 <sup>E</sup>	13	F	8 <sup>E</sup>
Boys	36	30	26	F	F	F	11 <sup>E</sup>
Average minutes per day (population) <sup>2</sup>							
<b>1986</b>							
Both sexes	28	21	9	5	7 <sup>E</sup>	F	7 <sup>E</sup>
Girls	34	30	13	8	9 <sup>E</sup>	F	F
Boys	24 <sup>E</sup>	13* <sup>E</sup>	5* <sup>E</sup>	2* <sup>E</sup>	F	F	F
<b>2005</b>							
Both sexes	23	17	7	1 <sup>E</sup>	8 <sup>E</sup>	F	7 <sup>E</sup>
Girls	27	22	8 <sup>E</sup>	1 <sup>E</sup>	12 <sup>E</sup>	F	F
Boys	20	11* <sup>E</sup>	6	F	F	F	9 <sup>E</sup>

<sup>1</sup> Includes such items as outdoor cleaning, mending or sewing, interior or exterior maintenance or repairs, gardening, pet and plant care, or household paperwork.

<sup>2</sup> Time averaged over 7 days; numbers may not add due to rounding.

\* Statistically significant difference with girls at the <.05 level.

Source: Statistics Canada, General Social Survey

## Data sources and definitions

Since 1985, the **General Social Survey (GSS)** has annually interviewed Canadians aged 15 and over living in the 10 provinces on a wide range of social trends and social policy issues. Using a 24-hour diary instrument, the GSS has collected detailed information on time use in four different years with varying sample sizes—1986 (16,400), 1992 (9,800), 1998 (10,700) and 2005 (19,600). Individual activities are recorded sequentially for a 24-hour **diary day**. All activities are subsequently coded to a standard international classification. Each day of the week is sampled. Therefore, calculations are usually averaged over a 7-day period (see below). While the 1986 survey collected data during the months of November and December only, all remaining cycles covered a 12-month period.

Each month, the **Labour Force Survey (LFS)** collects information on labour market activity, covering a one-week reference period, from all persons 15 and older. The survey includes questions about the usual and actual weekly hours at main and secondary jobs. The **LFS employment rate** for a particular group (for example, girls aged 15 to 19) is the employed labour force in that group expressed as a percentage of their population. For comparison purposes, the annual LFS data used in this paper were customized to align with the target population (see below). (Student status in the LFS is based on school attendance during the survey reference week).

**Target population:** all teenagers aged 15 to 19 who were interviewed in September through June (the traditional school year). They also had to be single and never married, living at home with at least one parent, and report their main activity as attending school. Around 80% of teenagers living at home reported going to school as their main activity. Some comparisons are made with the adult population aged 20 to 64. Those over 64 are more likely to be retired and have quite different unpaid and paid work activity patterns.

**School attendance** refers to the total time spent in full-time or part-time classes, special lectures, meals at school, breaks between classes, and travel to and from school. Based on an international standard, a day was designated a **school day** if 60 minutes or more were spent attending school (Zuzanek and Mannell 2005).

**Homework** includes all study time related to course work.

**Paid work** includes time spent on all activities related to a job or business. The GSS data also include time spent travelling to and from the workplace, as well as unpaid work in a family, business or farm.

**Core housework** covers meal preparation, meal clean-up (for example, doing the dishes or clearing the table), indoor cleaning (for example, dusting or vacuuming), and laundry. Core activities are those that are most likely done on a daily basis and demand, on average, the most time. **Non-core housework** includes such items as outdoor cleaning, mending or sewing, interior or exterior maintenance and repair, gardening, pet and plant care, household paperwork, and unpacking groceries. **Total housework** comprises core and non-core activities.

A respondent is deemed to have **immigrant parents** if both their mother and father were born outside Canada. **Canadian-born parent(s)** means that at least one parent was born in Canada.

All the teenagers in this study lived in a **two-parent intact family** (never-divorced parents), a **two-parent blended family** (one parent and one step-parent), or a **one-parent family** (either mother or father).

**Parental level of education** is based on the highest level achieved. The derived categories are both parents having a university degree, both having a high school diploma or less, and a 'mix' of levels. A mix means that both parents could have a postsecondary certificate or diploma, or a combination of any of the levels noted here.

An **urban** area has a minimum population of 1,000 and a population density of at least 400 persons per square kilometre. **Rural** areas comprise all territory not deemed urban.

**Positive well-being** is being 'very happy' and/or feeling 'very satisfied' with 'life as a whole right now' (that is, reporting a 9 or 10 on a scale of 1 to 10).

**Activity participation rate** (time use) indicates the proportion of the population (or sub-population) that reported spending some time on a particular activity on diary day. The participation rate is a daily rate, and unless otherwise specified is an average over a seven-day week (average of the daily rates of Sunday through Saturday diary days).

**Average time spent on specific activities** (time use) of the population or sub-population refers to the total time all respondents reported spending on a given activity divided by the population and averaged over a seven-day week. The average time spent on activities for participants refers to the average time spent of only those who participated in that activity on diary day, but again over seven days.

the younger generation. Daily participation in housework in 1986 was significantly higher for girls than for boys (53% versus 33%), but by 2005 the rates had converged to 43% and 36% respectively. Although not significant in either year, the gap in time spent also narrowed over the period. And, even though the boundaries between traditional male and female housework

tasks are still evident, some indication of a breakdown can be seen. For example, in 1986, on any given day, 30% of girls were likely to help with meal preparation at home, compared with only 17% of boys. By 2005, about one-quarter of both were doing some work in the kitchen each day.



## Volunteering

The incidence of daily participation in volunteer work is too small for a detailed analysis. However, questions were also asked about volunteering in the past year. In 2005, more than half (54%) of all school-attending teenagers aged 15 to 19 did some unpaid volunteer work, significantly higher than the adult (20 to 64) rate (35%). Some 60% of both teen and adult volunteers put in at least five or more hours per month. These findings mirror those in national volunteer surveys (Hall et al. 2006).

Some provinces have begun to legislate mandatory community service as a requirement for high school graduation. Total requirements range from 40 hours in Ontario to 25 hours in the Northwest Territories and Nunavut (Volunteer Canada 2006). This is probably behind Ontario's significantly higher annual volunteer rate for teenagers (66%).

### Volunteered<sup>1</sup> sometime in 2005

	Teens	Adults
	%	
<b>Total</b>	<b>54</b>	<b>35</b>
Boys/men (ref)	51	32
Girls/women	58	38*
British Columbia (ref)	48	37
Alberta	54	42*
Manitoba and Saskatchewan	47	43*
Ontario	66*	36
Quebec	40	26*
Nova Scotia	52	41
Other Atlantic	51	37

1 Did unpaid volunteer work for any organization.

\* Significant difference with reference (ref) group at the <.05 level.

Source: Statistics Canada, General Social Survey

The next section focuses on 2005 data and examines the key factors associated with teenagers' daily participation in and time spent on the three key productive non-school activities: homework, paid work and housework. Included are results of Tobit regression models for each activity (see *Regression*).

## Family characteristics and paid work linked to homework

Skills and knowledge acquisition from schooling is a teen's most important asset for ensuring a positive socio-economic outcome later in life. Strong cognitive skills enable children to do well in school and perform better on standardized tests, thus increasing the likelihood of attaining higher levels of education. Reading abilities and marks are most important and account for 34% of the gap in university attendance between

lower- and higher-income families (Frenette 2007). The second most important influence is parental education (30%), followed by parental expectations (12%) and financial constraints (12%). But what determines the gap in marks? Commitment to homework, as examined here may shed some light on this issue, since logically, good study habits improve academic performance (Bianchi and Robinson 1997). Time spent on homework can also be an indicator not only of school effort, but also of dedication and a desire to do well.

On any given day, roughly 6 in 10 teenagers aged 15 to 19 did an average of 2 hours and 17 minutes of homework (Table 3). Averaged over the population, the time spent on homework was 1 hour and 19 minutes. Mainly because of the difference in participation rate (68% versus 39%), homework effort was significantly higher on school days (26 additional minutes). So in addition to seven hours of classes and related activities, most teens spent just under two hours doing homework on school days.<sup>5</sup> When controlling for other characteristics, older teens (18 and 19) also spent significantly more time per day on homework than their younger counterparts (15 to 17).

Participation in and time spent on homework was strongly influenced by both sex and cultural background. While over 7 in 10 boys with immigrant parents (both parents born outside Canada) did homework daily, and for an average of 2 hours and 37 minutes, only half of boys with Canadian-born parent(s) did so, and for just under 2 hours. The net

## Regression

Tobit regression analysis is well suited to time-use data, which has a large number of non-participants in certain activities on any given day. The technique assesses all participants and non-participants by simultaneously considering both the likelihood of daily participation and the average duration of time spent. The model first treats the data as binary (0 or 1) based on whether the respondent participated in the activity on diary day (for example, homework) and then fits the positive values (minutes spent doing it) linearly. The marginal effect is another way to interpret the model coefficients and represents the impact of time spent at the mean value of each variable. The calculation is based on the probability of participating in an activity multiplied by the mean value of time spent. The analysis was run with Stata 9, which allows for the application of bootstrap weights. For other examples of Tobit analysis and time-use data, see Flood and Graso 1998 and Bianchi and Robinson 1997.

**Table 3 Homework participation and time spent**

	Population	Participation rate	Time per day (participants)	Time per day (population)	Tobit estimates <sup>1</sup> predicting minutes per day
	'000	%	Hours:minutes		
<b>Total</b>	<b>1,228</b>	<b>57</b>	<b>2:17</b>	<b>1:19</b>	<b>...</b>
<b>Age</b>					
15 to 17	676	57	1:58	1:07	-22**
18 to 19	552	58	2:41	1:33	ref
<b>Boys</b>	593	54	2:09	1:09	...
<b>Girls</b>	635	61	2:24	1:28	...
<b>Immigrant parents</b>					
Boy	132	71	2:37	1:52	20
Girl	128	74	1:56	1:25	4
<b>Canadian-born parent(s)</b>					
Boy	453	50	1:57	:58	-21**
Girl	494	58	2:35	1:30	ref
Two parents (intact family)	862	63	2:22	1:29	ref
Two parents (blended family)	132	49	2:00	:58	-20
One parent	235	43	2:04	:53	-31***
<b>Education level of parents</b>					
Both university	213	69	2:48	1:57	34**
Mixed	358	61	2:10	1:19	10
Both high school or less	384	51	2:15	1:09	ref
School day	773	68	1:57	1:20	26***
Non-school day	456	39	3:16	1:17	ref
Urban	979	59	2:21	1:23	13
Rural	250	51	1:58	1:01	ref
Not employed	770	57	2:21	1:20	ref
<b>Usual weekly job hours</b>					
1-9	106	59	2:50	1:40	19
10-19	173	70	2:17	1:35	12
20+	172	46	1:36	:45	-32 **

1 This is the marginal effect each variable has on the time spent doing daily homework.

\* Regression results statistically significant at the <.10 level; \*\* <.05 level, \*\*\* <.01 level from the reference (ref) group.

Source: Statistics Canada, General Social Survey, 2005

result is an overall reduced effort on homework by boys compared with girls. Controlling for other factors shows that among teens with Canadian-born parent(s), boys did significantly less homework (21 minutes per day) than girls. However, no significant difference was found for boys or girls with immigrant parents.

Being in a two-parent intact family significantly increases both the chances of doing homework and of doing more of it. Over 6 in 10 teens from such families did homework on a daily basis, compared with less than half of those in two-parent blended and lone-parent families. Controlling for other factors shows that teens in one-parent families averaged 31 minutes less

per day on homework than those in two-parent intact families. Children's activity patterns are different in one- and two-parent households. With only one adult to manage the household, less time is available to monitor activities and supervise homework (Bianchi and Robinson 1997, 335).

It appears that highly educated parents either encourage or enforce the issue of homework for their children more than parents with lower education levels. Seven in 10 teens whose parents both had university education did homework on a daily basis and spent close to three hours at it—significantly more than those whose parents had less education.<sup>6</sup>

Compared with students currently not employed, only those in jobs with long weekly hours (20 or more) did significantly less homework (32 minutes less per day). An ongoing debate rages about the pros and cons of having a job through high school. Although studies have found moderate employment hours to be linked with positive future earnings, occupational status and academic performance, and most show long hours (20 or more per week) to be detrimental to school performance (Ruhm 1997; Stinebrickner and Stinebrickner 2003; Zuzanek and Mannell 2005; Parent 2006).

### Work for pay more common on weekends and among older teens

By the end of high school, most teenagers will have done some work for pay. Many start with informal work such as babysitting or yard work, and then move to more formal organizational settings, which offer more complex work (Mortimer et al. 1994).



**Table 4 Paid work participation and time spent**

	Population	Participation rate	Time per day (participants)	Time per day (population)	Tobit estimates <sup>1</sup> predicting minutes per day
	'000	%	Hours:minutes		
<b>Total</b>	<b>1,228</b>	<b>21</b>	<b>5:04</b>	<b>1:05</b>	...
<b>Age</b>					
15 to 17	676	14	4:33	:39	-47***
18 to 19	552	30	5:22	1:36	ref
<b>Boys</b>	593	19	5:03	:59	-16
<b>Girls</b>	635	23	5:04	1:10	ref
<b>Immigrant parents</b>					
Boy	132	F	F	F	...
Girl	128	F	F	F	...
<b>Canadian-born parent(s)</b>					
Boy	453	21	4:59	1:01 <sup>E</sup>	...
Girl	494	25	5:05	1:18	...
Two parents (intact family)	862	22	5:11	1:08	ref
Two parents (blended family)	132	24 <sup>E</sup>	4:08 <sup>E</sup>	:59	7
One parent	235	18 <sup>E</sup>	5:15	:56 <sup>E</sup>	-9
<b>Education level of parents</b>					
Both university	213	16 <sup>E</sup>	3:45	:36 <sup>E</sup>	ref
Mixed	358	27	4:24	1:10	33*
Both high school or less	384	22	6:21	1:23	33
School day	773	17	4:00	:42	-37***
Non-school day	456	28	6:12	1:43	ref
Urban	979	21	5:03	1:05	7
Rural	250	21 <sup>E</sup>	5:06	1:04 <sup>E</sup>	ref

1 This is the marginal effect each variable has on the time spent doing daily paid work.

\* Regression results statistically significant at the <.10 level; \*\* <.05 level, \*\*\* <.01 level from the reference (ref) group.

Source: Statistics Canada, General Social Survey, 2005

In 2005, one in five teenagers aged 15 to 19 worked at a paid job for five hours on diary day (Table 4). As expected, younger teens (15 to 17) were significantly less likely to report daily employment activity (14%) than those aged 18 or 19 (30%) and likely to spend less time at it (47 minutes less per day).<sup>7</sup> Teenagers did significantly more paid work on the days they did not attend school, with 28% working just over six hours. Teens with par-

ents with lower levels of education did 33 more minutes per day of paid work than those with university-educated parents.

### Housework is gender-neutral among teens with Canadian-born parents

Housework performed by children has been written about in terms of sex-role socialization—its role in teaching responsibility and life

skills—and more lightly, in terms of the never-ending battle. The introduction of compulsory schooling in the late 1800s significantly reduced the amount of children's domestic labour. The more recent reduction in housework participation by teens may be partly due to our evolving service-oriented economy and changing attitudes toward housework standards and priorities (Marshall 2006). Still, 39% of teens put in about an hour of housework daily (Table 5). Because of reduced opportunity and time, students do significantly less housework on school days than on weekends and other non-school days (9 minutes less per day). While age does not make a difference, teenagers in urban settings participated less in housework than their rural counterparts and for fewer hours. Since housework includes outdoor chores, work on farms may be part of the reason behind this difference.

Cultural background and family formation also play a role. After controlling for other factors, no significant difference was seen between girls and boys of Canadian-born parents in the effort on housework. Both had a daily participation rate of 40% and spent about one hour at it. However, compared with girls of Canadian-born parents, girls of immigrant parents did significantly more housework (17 minutes per day), and boys of immigrant parents did significantly less (11 minutes).

Finally, teenagers in two-parent blended families were much more likely to help with housework than teens in other family types. Both girls and boys with step-parents helped out more—72% of girls did housework daily for 50 minutes, 43% of boys for 66 minutes.

**Table 5 Housework participation and time spent**

	Population	Participation rate	Time per day (participants)	Time per day (population)	Tobit estimates <sup>1</sup> predicting minutes per day
	'000	%	Hours:minutes		
<b>Total</b>	<b>1,228</b>	<b>39</b>	<b>:59</b>	<b>:23</b>	...
<b>Age</b>					
15 to 17	676	39	:51	:20	-2
18 to 19	552	40	1:08	:27	ref
<b>Boys</b>	593	36	:55	:20	...
<b>Girls</b>	635	43	1:02	:27	...
<b>Immigrant parents</b>					
Boy	132	24 <sup>E</sup>	F	F	-11*
Girl	128	48	1:32 <sup>E</sup>	:44 <sup>E</sup>	17*
<b>Canadian-born parent(s)</b>					
Boy	453	40	:58	:23 <sup>E</sup>	0
Girl	494	40	:52	:21	ref
Two parents (intact family)	862	38	1:01	:23	ref
Two parents (blended family)	132	56	:57 <sup>E</sup>	:32 <sup>E</sup>	15**
One parent	235	36	:53	:19	-1
<b>Education level of parents</b>					
Both university	213	38	:51 <sup>E</sup>	:19 <sup>E</sup>	ref
Mixed	358	41	:54	:22 <sup>E</sup>	6
Both high school or less	384	40	1:06 <sup>E</sup>	:26 <sup>E</sup>	5
School day	773	37	:44	:16	-9**
Non-school day	456	43	1:21	:35	ref
Urban	979	38	:52	:20	-11*
Rural	250	46	1:21	:37 <sup>E</sup>	ref

1 This is the marginal effect each variable has on the time spent doing daily housework.

\* Regression results statistically significant at the <.10 level; \*\* <.05 level, \*\*\* <.01 level from the reference (ref) group.

Source: Statistics Canada, General Social Survey, 2005

### Stress higher for girls, older teens and those who spend long hours at homework and paid work

Like adults, teenagers can feel somewhat burdened with their day-to-day unpaid and paid work responsibilities. Approximately 1 in 10 regularly felt very stressed with not having enough time in the day (Table 6). A similar proportion were quite or extremely stressed because of school, while 16%

considered themselves workaholics. Almost 4 in 10 reported being under constant pressure to accomplish more than they could handle, and 6 in 10 tended to cut back on sleep when they needed more time.<sup>8</sup> One-quarter of teens reported not having any of these five stress indicators related to time and productive work, 36% mentioned one, 23% two, and 16% three or more—an average of 1.4 per teenager.

Stress-level rates have changed very little over time. Another constant has been that for each question, girls tend to report a higher level of stress than boys. In 2005, girls had significantly more stress indicators than boys (Table 6). Interestingly, adult women have also consistently reported higher work-family stress than men (Zukewich 2003; Marshall 2006). For example, in terms of feeling constant pressure to accomplish more than is manageable, women in each age group reported higher rates than men, and teenage girls aged 18 to 19 had the highest rate overall (Chart D).

Older teens also reported significantly more stress indicators than younger teens. This is understandable since the last year of high school (or first year of postsecondary schooling) is often more difficult than the first years of high school, and the need for good marks is crucial. Furthermore, 18 and 19 year-olds are on the cusp on adulthood, which brings increased independence and personal and financial responsibility. Two other factors that significantly increase stress in a teen's life included spending more than 2.5 hours per day on homework, and having 20 hours or more of paid work per week.

### Girls report more stress, but self-rating of well-being equal to boys

Although most teens answered yes to at least one indicator, some stress may not necessarily be detrimental.<sup>9</sup> In fact, moderate levels of stress have been positively linked with performance, energy and health. On the other hand, too much long-term stress can have negative mental and physical health effects (Farmer and Ferraro 1997; Wein 2000).



**Table 6 Indicators of personal stress related to time and unpaid and paid work**

	Very stressed for lack of time	Very stressed from school	Is a workaholic	Constant pressure to do more than can handle	Cut back on sleep to gain more time	Stress indicators
			%			Number
<b>Total</b>	<b>11</b>	<b>12</b>	<b>16</b>	<b>39</b>	<b>64</b>	<b>1.4</b>
Girls	14	15	17	46	68	1.6*
Boys (ref)	8 <sup>E</sup>	9	15	32	60	1.3
<b>Age</b>						
15 to 17 (ref)	7 <sup>E</sup>	9 <sup>E</sup>	14	36	58	1.2
18 to 19	16	17	18	44	71	1.7*
<b>Homework on diary day<sup>1</sup></b>						
None (ref)	7 <sup>E</sup>	7 <sup>E</sup>	12 <sup>E</sup>	40	63	1.3
Less than 1.5 hours	9 <sup>E</sup>	8 <sup>E</sup>	19 <sup>E</sup>	34	63	1.3
1.5 to 2.5 hours	12 <sup>E</sup>	15 <sup>E</sup>	19 <sup>E</sup>	36	65	1.5
Over 2.5 hours	24 <sup>E</sup>	27 <sup>E</sup>	17 <sup>E</sup>	48	66	1.8*
Diary day a school day (ref)	8 <sup>E</sup>	11	18	38	63	1.4
Non-school day	16 <sup>E</sup>	15 <sup>E</sup>	12 <sup>E</sup>	41	66	1.5
Not employed	10 <sup>E</sup>	11	14	38	60	1.4
Usual weekly hours						
1 to 9 (ref)	F	F	F	40 <sup>E</sup>	58	1.2
10 to 19 hours	F	F	16 <sup>E</sup>	38	77	1.6
20 hours or more	15 <sup>E</sup>	18 <sup>E</sup>	31 <sup>E</sup>	42	71	1.8*

<sup>1</sup> The reference day of the interview (see *Data sources and definitions*).

\* Statistically significant difference (<.05 level) from reference (ref) group.

Source: Statistics Canada, General Social Survey, 2005

Roughly two-thirds of all girls and boys in 2005 reported being very happy and/or very satisfied with life overall<sup>10</sup> (Table 7). However, the higher the level of personal stress (defined as the total number of indicators), the lower the likelihood of having very high levels of happiness and/or satisfaction. Of those with three or more stress indicators, only 45% were very happy and/or very satisfied with life, compared with a 72% positive rating among teens with no stress indicators.

Higher levels of stress (three or more indicators) reduced the level of happiness and satisfaction for both girls and boys to 40% and 52% respectively (a significant drop for girls). When little or no stress was indicated, about 80% of girls

**Table 7 Positive well-being by number of stress indicators related to time and unpaid and paid work**

	Total	None	One	Two	Three or more
Currently feels very happy and/or very satisfied with life as a whole			%		
<b>Both sexes</b>	<b>64</b>	<b>72</b>	<b>73</b>	<b>57*</b>	<b>45*</b>
Girls	65	78	80	55*	40* <sup>E</sup>
Boys	63	68	66	60	52 <sup>E</sup>

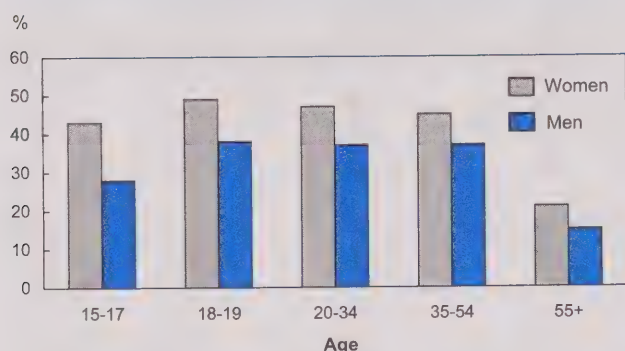
\* Statistically significant difference at the <.05 level from those with no stress indicators.

Source: Statistics Canada, General Social Survey, 2005

reported being very happy and/or very satisfied, compared with only about two-thirds of boys. Therefore, although girls reported more stress, which seems to suppress

feelings of well-being, their relatively high well-being when they had little or no stress equalized their overall rating of well-being to that of boys.<sup>11</sup>

**Chart D Almost half of older teenage girls feel constant pressure to accomplish more than they can handle**



Source: Statistics Canada, General Social Survey, 2005

## Conclusion

The vast majority of 15 to 19 year-olds living at home with their parents attend school. In 2005, these teenagers did an average of 9.2 hours of school work, homework, paid work and housework on school days and 3.5 hours on weekends. This equates to a 50-hour workweek, the same time adults aged 20 to 64 spend on these activities. The time teens spend is arguably skill-enhancing and a positive investment in their long-term personal and economic well-being.

After school attendance, homework was the most time-consuming unpaid activity for teens, with 60% doing an average of 2 hours and 20 minutes every day. Family environment is a strong predictor of this activity. Teens were significantly more likely to do homework and more of it if both parents had a university education, if they lived in a two-parent intact family, and if their parents were foreign-born. Interestingly, boys with Canadian-born parents did significantly less homework than girls in similar families, and less than either girls or boys with immigrant parents. As well, teens with demanding paid jobs (20 hours or more per week) did significantly less homework than those not employed.

Age and type of day (school versus non-school) were strongly significant predictors of teens being involved in daily paid work. And indeed, paid work was the only productive activity that witnessed an increase over time. Although some studies have shown part-time

student employment to be positively linked with personal responsibility, dependability and future productivity, an excess can interfere with school. Furthermore, this study shows that teenagers with long paid workweeks reported higher levels of personal stress.

Almost 4 in 10 teens did some housework daily, averaging about one hour. Although differences have narrowed over the past 20 years, in 2005, girls with immigrant parents did significantly more housework than boys in such families. Time spent on housework was also higher in rural areas and in two-parent blended families.

In sum, most teens have relatively high workloads, and not surprisingly, this comes with some feelings of stress. For example, 16% considered themselves workaholics, 39% felt under constant pressure to accomplish more than they could handle, and most (64%) cut back on sleep to get things done. Although self-ratings of well-being decreased as stress went up, most teens responded positively to questions about happiness and life satisfaction. Education and skill development are important activities for teenagers, but balance in life is also essential for ensuring a positive sense of well-being.

## Perspectives

### Notes

- 1 The vast majority of students graduate from high school and continue with some form of postsecondary education. According to the 1995 School Leavers Follow-up Survey, 80% of high school graduates did further schooling towards a certificate, diploma or university degree (Frank 1997).
- 2 Since the reference period in the LFS is one week as opposed to the one day in time-use surveys, the LFS employment rate will be higher since the chances of reporting some work hours are greater.
- 3 Averaged over the population (including those not employed), in 2005, girls worked longer weekly hours in both the GSS and the LFS. However, among those employed, the GSS shows both sexes working the same average number of hours per week while the LFS shows boys working one hour more.
- 4 These differences are not statistically significant.
- 5 Homework can be completed any time during a school day—for example, during the lunch hour.
- 6 Family income, although often correlated with level of education, would have been included separately as well; however, the majority of teen respondents were not able to answer the income question.



7 Half of teens aged 18 to 19 and one-quarter of those aged 15 to 17 reported having a job at some time in the past week. Among those with jobs, 45% of the older group and 27% of the younger group usually worked 20 hours or more per week.

8 Among adults aged 20 to 64, 24% reported being very stressed from lack of time and 12% very stressed from work, 28% considered themselves workaholics, 39% felt under constant pressure to do more than was manageable, and 52% cut back on sleep to gain more time. The average number of stress indicators was 1.5 for men and 1.6 for women, a statistically insignificant difference.

9 Among girls, 20% reported no stress indicators, 36% had one, 25% had two, and 19% had three or more. The equivalent distribution for boys was 29%, 36%, 21% and 14%.

10 More broadly, 97% of teenagers were very or somewhat happy, and 95% had a life satisfaction rating of at least 6 or higher out of 10. Although not discussed, 1986 data show similar levels.

11 Although the existence of time and work-related stress appears to affect girls and boys differently in terms of their sense of well-being, it must be kept in mind that stress in an adolescent's life comes from many different sources.

## ■ References

- Bianchi, Suzanne M., and John Robinson. 1997. "What did you do today? Children's use of time, family composition, and the acquisition of social capital." *Journal of Marriage and the Family*. Vol. 59, no. 2. May. p. 332-344.
- Farmer, Melissa M. and Kenneth F. Ferraro. 1997. "Distress and perceived health: Mechanisms of health decline." *Journal of Health and Social Behavior*. Vol. 38, no. 3. September. p. 298-311.
- Flood, Lennart and Urban Gråsjö. 1998. *Regression Analysis and Time Use Data: A Comparison of Microeconomic Approaches with Data from the Swedish Time Use Survey (HUS)*. Working Papers in Economics no. 5. School of Economics and Commercial Law, Göteborg University, Sweden. 18 p.
- Frank, Jeffrey. 1997. "After high school..." *Perspectives on Labour and Income*. Vol. 9, no. 2. Summer. Statistics Canada Catalogue no. 75-001-XPE. p. 37-42.  
<http://www.statcan.ca/english/studies/75-001/archive/e-pdf/e-9725.pdf> (accessed May 2, 2007).
- Frenette, Marc. 2007. *Why Are Youth from Lower-income Families Less Likely To Attend University? Evidence from Academic Abilities, Parental Influences and Financial Constraints*. Statistics Canada Catalogue no. 11F0019MIE no. 295. Ottawa. Analytical Studies Branch Research Paper Series. 38 p.  
<http://www.statcan.ca/english/research/11F0019MIE/11F0019MIE2007295.htm> (accessed May 2, 2007).
- Hall, Michael, David Lasby, Glenn Gumulka, and Catherine Tryon. 2006. *Caring Canadians, Involved Canadians: Highlights from the 2004 Canada Survey of Giving, Volunteering and Participating*. Statistics Canada Catalogue no. 71-542-XIE. 99 p.  
<http://www.statcan.ca/english/freepub/71-542-XIE/71-542-XIE2006001.pdf> (accessed May 2, 2007).
- Keeley, Brian. 2007. *Human Capital: How What You Know Shapes Your Life*. Organisation for Economic Co-operation and Development (OECD). OECD Insights Series. 148 p.
- Marshall, Katherine. 2006. "Converging gender roles." *Perspectives on Labour and Income*. Vol. 18, no. 3. Autumn. Statistics Canada Catalogue no. 75-001-XPE. p. 7-19.
- Mortimer, Jeylan T., Michael D. Finch, Katherine Dennehy, Chaimun Lee and Timothy Beebe. 1994. "Work experience in adolescence." *Journal of Vocational Education Research*. Vol. 19, no. 1. p. 39-70.
- Parent, Daniel. 2006. "Work while in high school in Canada: Its labour market and educational attainment effects." *Canadian Journal of Economics*. Vol. 39, no. 4. November. p. 1125-1150.
- Ruhm, Christopher J. 1997. "Is high school employment consumption or investment?" *Journal of Labor Economics*. Vol. 15, no. 4. October. p. 735-776.
- Stinebrickner, Ralph and Todd R. Stinebrickner. 2003. "Working during school and academic performance." *Journal of Labor Economics*. Vol. 21, no. 2. April. p. 473-491.
- Volunteer Canada. 2006. *Volunteering and Mandatory Community Service: Choice, Incentive, Coercion, Obligation*. Ottawa. 17 p.
- Wein, Harrison. 2000. "Stress and disease: New perspectives." National Institutes of Health, U.S. Department of Health and Human Services. 4 p.
- Zukewich, Nancy. 2003. *Work, Parenthood and the Experience of Time Scarcity*. Statistics Canada Catalogue no. 89-584-XIE no. 1. 24 p.  
<http://www.statcan.ca/english/research/89-584-MIE/89-584-MIE2003001.pdf> (accessed April 27, 2007).
- Zuzanek, Jiri and Roger Mannell. 2005. "Adolescent time use and well-being from a comparative perspective." *Society and Leisure*. Vol. 28, no. 2. Autumn. p. 379-423.

# Payday loans

Wendy Pyper

**S**o-called 'fringe banking' or the 'alternative consumer credit market' is a growing industry in Canada, with outlets providing a variety of services including short-term, 'payday' loans. The business of providing payday loans is quite young, beginning only in the early 1990s. The roughly 200 outlets in the United States at that time have now grown to around 22,000, with an annual loan volume of \$40 billion (Ernst and Young 2004; Kirchhoff 2006). Rapid growth has also occurred in Canada—from a handful to approximately 1,200 in 2004 (Kitching and Starky 2006, 4). The industry consists of short-term lenders that are not deposit-taking institutions. It is therefore currently unregulated for the most part, since most statutes applicable to mainstream financial institutions do not apply (CMC 2004, 2).

While the alternative financial sector is very small compared with major financial institutions, it does handle a large number of transactions (Ramsay 2000, 4). Concerns have been raised about questionable practices within the payday loan industry, including high borrowing costs, insufficient disclosure of contract terms, unfair collection practices, and spiralling debt loads resulting from loans being rolled over<sup>1</sup> (Canada 2006; ACORN Canada 2004). When annualized, interest rates and other fees charged for borrowing \$100 for 14 days can range from 335% to 650%—rates that exceed the criminal interest provisions of the Criminal Code (see *Payday loans primer*).<sup>2</sup>

Families borrow money for different reasons. They may be unable to meet expenditures with their current income or assets—life-cycle stage, education, and income all affect whether a family has the needed financial resources. Also, families have different financial management skills and experiences, influencing savings and spending patterns.

---

Wendy Pyper is with the Labour and Household Surveys Analysis Division. She can be reached at 613-951-0381 or [wendy.pyper@statcan.ca](mailto:wendy.pyper@statcan.ca).

But why do people borrow money using a payday loan rather than through a bank? Some may prefer the convenience, with location, hours of operation, and ease and speed of approval playing a key role (Environics 2005). Some may choose a payday loan because they live in a community that is underserved by mainstream financial institutions (ACORN 2004). Those with a poor credit rating, a previous bankruptcy, or no bank account may not have the option of using less expensive means such as credit cards, lines of credit, or overdraft protection. Without payday loans, some consumers may be led to less desirable credit options such as loansharking and organized crime (CMC 2002).

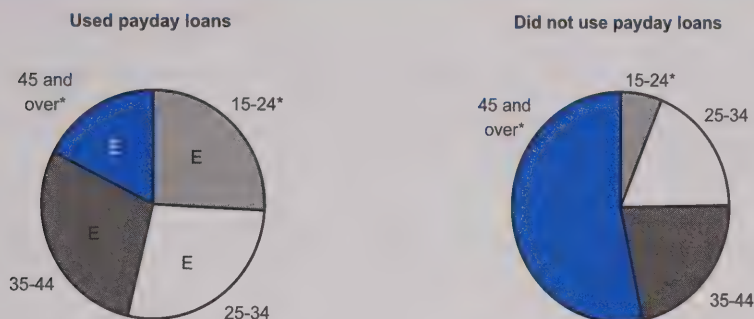
The 2005 Survey of Financial Security (SFS) provided the first information about the use of payday loans, and this article examines the characteristics, attitudes and behaviours of these families (see *Data source and definitions*). Because many factors are interrelated (age, family type, education, and savings, among others), a logistic regression was used (see *Logistic regression*). This technique allows the relationship between, for example, age and payday-loan borrowing to be examined while holding other specified family characteristics constant.

## Youth a factor in payday loans

In 2005, less than 3% of families (353,300) reported having taken out a payday loan within the previous three years. However, this varied with demographic and socio-economic characteristics (Chart A). Fully one-quarter of families who were payday loan borrowers had a major income recipient aged 15 to 24, compared with only 6% who were not.<sup>4</sup> Similarly, payday-loan families less frequently had a major income recipient 45 or older (17% versus 53%). Various factors may be behind these differences, including the life cycle of savings and income as well as varying experience with financial management.



**Chart A Families resorting to payday loans are more often younger**



\* Significant difference at the 0.05 level or less between those who borrowed through payday loans and those who did not.

Source: Statistics Canada, Survey of Financial Security, 2005

Looked at from another angle, the incidence of payday loan use varied significantly according to the age of the major income recipient (Table 1). Less than 1% of families with a major income recipient 45 or older bor-

rowed money using a payday loan, compared with 10% of young families (15 to 24). Even after controlling for key financial variables such as income and bank balances, young families were more likely to have had a payday loan. Relative to the reference group (major income recipient aged 35 to 44), young families were 3 times more likely to have used payday loans.

Family type could make a difference for several reasons.<sup>5</sup> Paying bills may be more difficult if income needs to be stretched over more family members. Expenses related to raising children may also cause a family to come up short. On the surface, unattached individuals and married couples with children were significantly more likely than couples without children to have used payday loans (3.6%, 3.5%, and 1.6% respectively).

## Payday loans primer

Payday loans are short-term loans for relatively small amounts (\$100 to \$1,000) offered by lenders other than banks or other regulated financial institutions. The average loan is \$280 for a period of 10 days (CPLA 2006). Generally, a borrower is required to have identification, a chequing account, and proof of regular income. Repayment is on or before the next payday. Lenders have different rules as to the amount that can be borrowed and often set a limit based on the borrower's net pay. The borrower provides a postdated cheque for the amount of the loan plus the various fees and interest charges (Kitching and Starky 2006, 1).

In 2004, roughly 1,200 locations offered payday loans in Canada. These 'fringe banking' companies also provide cheque cashing, advances on tax refunds, and money transfers. Most of their revenue is generated from payday loans and cheque cashing services (Kitching and Starky 2006, 4).

The cost to the borrower consists of interest and various fees including administration, processing, and broker's and collection fees. The Financial Consumer Agency of Canada estimates the cost of a \$300 loan taken for 14 days at \$50, equivalent to 435% per year, far higher than other short-term borrowing such as a cash advance on a credit card (\$4.13 or 36%), overdraft protection (\$2.42 or 21%), or a line of credit (\$1.15 or 10%).<sup>3</sup>

### Comparing the cost of a \$300 loan taken for 14 days<sup>1</sup>

	Payday loan	Cash advance on credit card	Overdraft protection on bank account	Borrowing from line of credit
Interest	...	2.13	2.42	1.15
Applicable fees	50.00	2.00	...	...
<b>Total cost of loan</b>	<b>50.00</b>	<b>4.13</b>	<b>2.42</b>	<b>1.15</b>
Loan cost as a percentage of amount borrowed <sup>3</sup>				
	435	36	21	10

1 Costs and fees are for illustration only.

2 Monthly service packages often include overdraft protection.

3 Estimated annual cost calculated by adding all fees, charges and interest charged after 14 days and projecting this over a one-year period.

Source: Financial Consumer Agency of Canada, *The Cost of Payday Loans*, p.11

The cost of the loan is often set out as a fee rather than interest. One study of the costs of payday loans in the Toronto area found different fee structures: either per \$100 borrowed or a flat fee, irrespective of amount. Nominal interest rates ranged from 335% to 650% for a loan of \$100 paid back in 14 days (see *Payday loan survey*).

**Payday loan survey**

(Greater Toronto area for 14-day loan)

Lender	Loan		Fee as stated	Roll over	Graduated lending scheme <sup>1</sup>	APR <sup>2</sup> to borrow \$100	
	Minimum	Maximum				For 7 days	For 14 days
A	\$100	Up to 30% of customer's next pay	1% face per week + \$12.99 item fee (item fee waived if repaid before next payday)	No	No	727 %	390
B <sup>3</sup>	\$115	\$225	2.5% of face + \$1.99 item fee <sup>4</sup> + \$9.95 loan fee	No	Yes	670	335
C		30% net up to \$300	Flat fee \$15 per \$100	Yes	No	780	390
D	\$100	\$500	Graduated flat fee \$20 for \$100 \$30 for \$200 \$40 for \$300, etc.	No	Yes, will lend more and decrease charge/\$100	1,040	520
E	Representative would not talk over the phone						
F	\$200	Depends on familiarity with client	Flat fees \$5 + \$20 per \$100 (fee + administration charge)	No	No	1,300	650
G	\$100	\$500	Graduated flat fee \$25 for \$100 \$45 for \$200 \$65 for \$300, etc.	No	No	1,300	650
H	\$100	\$1,000	Flat fee \$20 per \$100	No	Yes	1,040	520

1 The outlet will initially loan a minimum amount, increasing as the customer becomes a regular client.

2 The annualized percentage rate (APR) is the nominal not effective rate. The nominal method is used for calculating consumer loans in North America and Europe, excluding the U.K. The effective method, which is a more complex actuarial calculation, is used in calculating the criminal rate of interest under section 347 of the Criminal Code. The effective rate would be significantly higher for short-term loans.

3 Cost of loan:  $(2.5\% \text{ of } \$115) + \$1.99 + \$9.95 = \$14.82$ ;  $\$14.82 \div 115 = x \div 100 \rightarrow x = 12.89$ ; APR then calculated for 7 and 14 days.

4 An item fee is charged on the entire amount, not for each \$100 borrowed. With an item fee, borrowing \$100 has a much higher APR than borrowing a larger amount.

Source: Ramsay, Iain. *Access to Credit in the Alternative Consumer Credit Market*, 2000

However, once other demographic, financial and behavioural characteristics were controlled for, family type itself was not related to the use of payday loans.

Families whose major income recipient had a university degree less frequently reported using payday loans—only 1.3% compared with over 3% for those with high school graduation or a postsecondary certificate or diploma. This may be related to higher income or being more informed about credit options, their costs, and the consequences of carrying excessive debt (Stegman and Faris 2003, 16). However, after other family characteristics were controlled for, education was not related to the use of payday loans.

**Payday loans, income and liquid savings**

Often, one of the conditions of borrowing money through a payday loan is having a regular income. It is therefore not surprising that families without an earner were less likely than those with at least one earner to have had a payday loan (odds ratio of 0.3).

One might expect income to be related to payday-loan borrowing. Indeed, low-income families<sup>6</sup> (after tax) were fully twice as likely as those not in low income to have used payday loans—4.6% compared with 2.3% (data not shown). A further breakdown shows that families with higher incomes had significantly lower incidence of using payday loans—1.4% for those above \$66,000 versus 3.0% for those between \$40,001 and \$66,000.



**Table 1 Characteristics of families who used payday loans**

	Used payday loans	Odds ratio
	%	
<b>Total</b>	<b>2.7</b>	...
<b>Family type<sup>1</sup></b>		
Unattached individual	3.6 <sup>E*</sup>	1.2
Married couple without children <sup>2</sup> (ref)	1.6 <sup>E</sup>	1.0
Married couple with children	3.5 <sup>E*</sup>	1.5
Other	2.0 <sup>E</sup>	1.4
<b>Major income recipient</b>		
<b>Age</b>		
15 to 24	10.3 <sup>E*</sup>	3.0*
25 to 34	3.9 <sup>E</sup>	1.1
35 to 44 (ref)	3.5 <sup>E</sup>	1.0
45 and over	0.9 <sup>E*</sup>	0.5
<b>Education</b>		
Less than high school	2.5 <sup>E</sup>	0.7
High school graduate	3.5 <sup>E</sup>	0.8
Non-university postsecondary certificate (ref)	3.3 <sup>E</sup>	1.0
University degree or certificate	1.3 <sup>E*</sup>	0.6
<b>After-tax income</b>		
\$23,000 or less	3.5 <sup>E</sup>	0.4
\$23,001 to \$40,000	2.8 <sup>E</sup>	0.6
\$40,001 to \$66,000 (ref)	3.0 <sup>E</sup>	1.0
Over \$66,000	1.4 <sup>E*</sup>	0.6
<b>Number of earners</b>		
None	F	0.3*
One or more (ref)	3.2	1.0
<b>Bank balance</b>		
\$500 or less	5.6*	2.6*
\$501 to \$2,000	2.1 <sup>E</sup>	1.3
\$2,001 to \$8,000 (ref)	1.2 <sup>E</sup>	1.0
Over \$8,000	F	1.0
<b>Household budget</b>		
Yes	3.4*	1.6
No (ref)	2.0 <sup>E</sup>	1.0
<b>Credit card</b>		
Yes (ref)	1.9	1.0
No, refused	11.4 <sup>E*</sup>	3.6*
No, not refused	5.4 <sup>E*</sup>	2.1*
<b>Bill or loan status</b>		
Behind	12.2 <sup>E*</sup>	4.3*
Up-to-date (ref)	1.5	1.0

1 Elderly families are in the 'other' category

2 With or without other relatives

\* Significantly different from the reference group (ref) at the 0.05 level or less.

Source: Statistics Canada, Survey of Financial Security, 2005

Available assets, particularly liquid savings in bank accounts, may also be used in times of need. Almost 6% of families with bank balances of \$500 or less had taken out a payday loan, compared with only 1% of those with balances between \$2,001 and \$8,000.<sup>7</sup>

Income and liquid savings are related, and as indicators of financial capability, both play a role in the use of payday loans. When the model includes family income but not liquid savings, income was significant (data not shown); however, when both were included, savings were significantly related to the use of payday loans, and income dropped out as a predictor. This illustrates that income is not the only factor—other aspects of a family's financial capability are at work when it comes to payday-loan borrowing. After controlling for other family characteristics, those with \$500 or less in their bank account were significantly more likely (2.6 times) than those with between \$2,001 and \$8,000 to have used payday loans. This is not surprising since having funds readily available to pay expenses likely means that families do not need to look elsewhere.

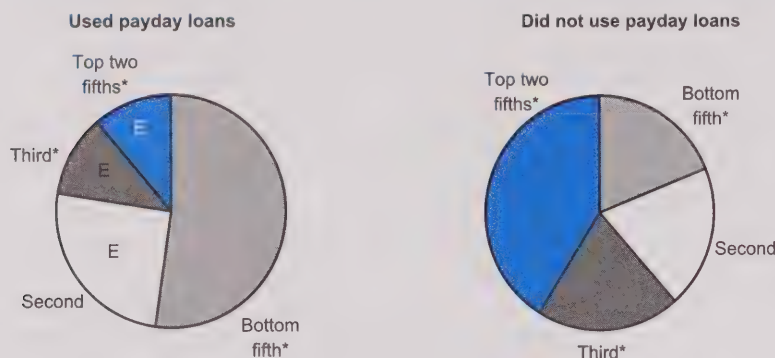
While cash held in bank accounts is one indicator of assets, net worth, the difference between total assets and total indebtedness, is a broader measure of financial health. Not surprisingly, the recourse to payday loans was higher for families at the lower end of the net worth distribution (Chart B). Indeed, 7.1% of families in the lowest fifth of net worth used payday loans, compared with only 1.5% of those in the middle fifth (data not shown). Over half of families who used payday loans were in the lowest 20% of net worth, and nearly 8 in 10 were in the bottom 40%.

Homeownership, a non-liquid asset and an indicator of life-cycle stage, is also tied to the incidence of payday loans. While less than 2% of homeowners with a mortgage had borrowed money through a payday loan, renters were almost three times as likely to have resorted to this method. Looked at another way, 7 in 10 families who used payday loans were renters (37% for those who had not borrowed). Possible reasons for these differences include the influence of age and income (Lefebvre 2002; Luffman 2006).

### Financial strategies

Credit cards are a convenient substitute for carrying cash. Over 8 in 10 families who had not used payday loans had credit cards, substantially more than the less than 6 in 10 families who were payday-loan users (Table 2). Not having a credit card may mean having

**Chart B Fully half of families who used payday loans were in the bottom fifth of the net worth distribution**



\* Significant difference at the 0.05 level or less between those who borrowed through payday loans and those who did not.

Source: Statistics Canada, Survey of Financial Security, 2005

to find alternative ways to deal with a short-term lack of funds. Less than 2% of families with a credit card resorted to payday loans (Table 1). Among families without a credit card and who had not been refused one, the incidence stood at 5.4%; for those who had been refused, the incidence reached 11.4%. Even after controlling for other family characteristics, families who did not have a credit card were more likely to have had a payday loan—twice as likely for those not refused a card and more than three times as likely for those who had been refused.

While using a credit card is not necessarily problematic, paying only a portion of the monthly balance by

## Data source and definitions

The **Survey of Financial Security (SFS)**, which covered about 5,300 families, collected information on the assets and debts of families and individuals between May and July 2005. Residents of the territories, households on Indian reserves, full-time members of the Armed Forces, and residents of institutions were excluded. Information was collected on the value of all major financial and non-financial assets as well as money owed. The SFS included a 'behaviours and attitudes' section, which asked about the way finances were managed.

While the SFS asked respondents about borrowing money through payday loans in the past three years, other questions were not based on this time frame. Some related to the time of the survey (age, family type, education, assets and debts, presence of a budget, use of credit cards), some were based on 2004 (income, being behind in payments, and several financial strategy questions), and declaring bankruptcy was based on having ever declared bankruptcy. While these differences in time frame may lead to some error, the methodology used in this study follows that used by Stegman and Faris (2003). Additionally, due to recall bias, respondents are less likely to remember events that took place long ago (Horvath 1982; Hassan 2006), so most of the reported use of payday loans is likely to be closely contemporaneous with the control variables.

**Borrowed money through payday loans:** The relevant SFS question was:

"In the past 3 years, have (any of) you borrowed money through a payday loan?"

**Family:** An economic family or an unattached individual. An **economic family** is a group of two or more persons living in the same dwelling and related to each other by blood, marriage, common law or adoption. An **unattached individual** is a non-elderly person living alone or with unrelated persons such as roommates or lodgers. **Married couples with children** are non-elderly couples (legally married or common-law) living with children (birth, adopted, step or foster) under 18. **Married couples without children** are non-elderly couples without children under 18. **Other families** include elderly families (65 or older) and lone-parent families.

The **major income recipient** is the person in the family with the highest income before tax.

A family's **net worth** is the difference between total assets and total indebtedness. Families are ranked by net worth and divided into five equal groups.

**Balance in savings and chequing accounts** excludes registered savings plans.

The **low-income cutoff** represents the income level at which a family may be in straitened circumstances because it has to spend a greater proportion of its income on necessities than an average family of similar size. Separate cutoffs are calculated for seven family and five community sizes. See Statistics Canada (2006) for more details.



**Table 2 Family behaviours and attitudes**

	Used payday loan	
	Yes	No
<b>Indicators of previous financial difficulties</b>	%	
Behind two months or more in a rent or mortgage payment (2004)	15 <sup>E</sup>	2*
Ever declared bankruptcy or made a formal or informal arrangement with a creditor	15 <sup>E</sup>	6*
<b>Financial management and spending</b>		
Spending in 2004 <sup>1</sup>		
Exceeded income	40	18*
Equalled income	39	40
Was less than income	21 <sup>E</sup>	42*
<b>Credit card</b>		
Yes	57	83*
Balance usually paid off each month	55	72*
No	43	17*
Had been refused	33 <sup>E</sup>	18
<b>Other financial strategies (2004)</b>		
Used an asset to pay a debt	16 <sup>E</sup>	5*
Pawned or sold possessions	19 <sup>E</sup>	2*
<b>Strategies in difficult financial times</b>		
Someone to turn to for assistance		
No	48	32*
Yes	49	56
Not necessary	F	12

<sup>1</sup> Excluding any money spent on investments or the purchase of a home or automobile.

\* Significant difference at the 0.05 level or less between families who used payday loans and those who did not.

Source: Statistics Canada, Survey of Financial Security, 2005

the due date incurs interest charges.<sup>8</sup> Among credit card holders, almost three-quarters of those who had not had a payday loan usually paid off their balance each month, compared with just over half of payday-loan users (Table 2).

Falling behind in bill payments may also indicate difficulty coping with expenses or general financial management. Families who had fallen behind in bills or loans were significantly more likely than those who had not fallen behind to use payday loans (4.3 times), even after controlling for other characteristics of the family.

Several other indicators of financial history confirm that families who borrowed money through a payday loan often faced financial difficulties. For example, not only were payday loan users more likely to fall behind

in bill or loan payments, but also 1 in 7 fell behind in rent or mortgage payments, far more than those who had not used payday loans (1 in 40).

### For many payday loan users, spending often exceeded income...

Spending patterns may be different in families with payday loans. For them, spending often exceeds income, suggesting a difficulty in making ends meet from month to month. Four in 10 said that their spending exceeded their income, substantially more than families who had not used payday loans (less than 2 in 10). Spending versus income may be influenced by one's stage in the life cycle.<sup>9</sup> For example, young families may be faced with larger material needs as they build their household and invest in themselves through education and training. Older families, on the other hand, have had more time to build savings, which can be used in times of financial need.

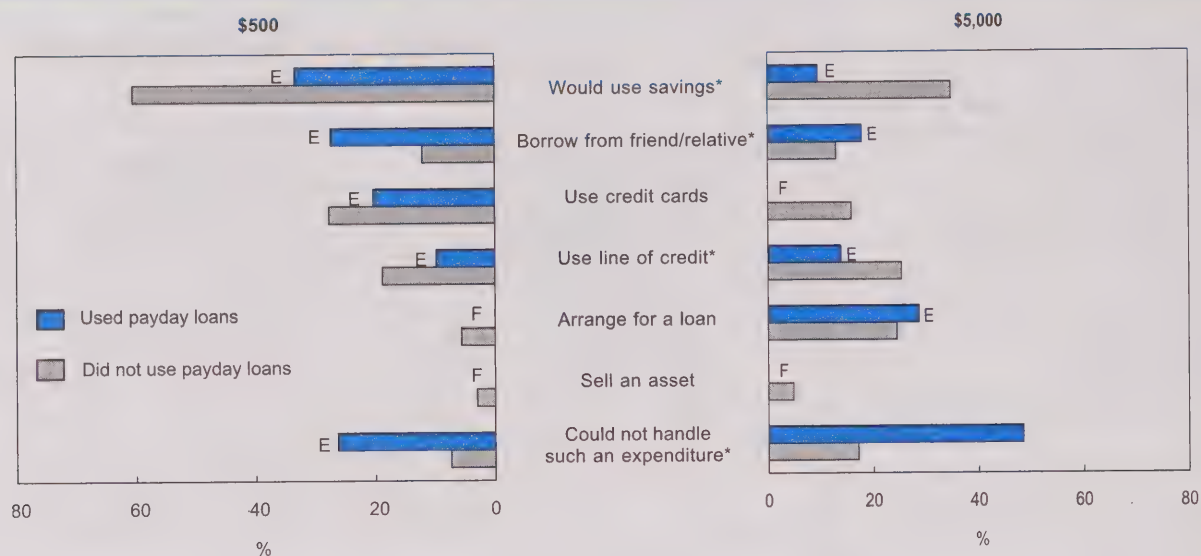
### ...and they more often sold assets or possessions

Strategies other than credit cards can be used to deal with debt. These include selling an asset or selling possessions to a pawnbroker. Among payday-loan families, one-sixth had sold an asset to pay a debt and one-fifth had dealt with a pawnbroker. This was significantly higher than families who had not had a payday loan (1 in 20 and 1 in 50 respectively). These extreme measures indicate a level of dire need. Also, payday loan users were more than twice as likely to have previously declared bankruptcy, an even stronger indicator of financial trouble (15% versus 6%).<sup>10</sup>

### Payday loan users often had no recourse

Almost half of families who used payday loans reported that they had no one to turn to for financial assistance in the face of financial difficulty, significantly more than other families (32%) (Table 2). It seems these families have few options for help. For a closer look at the options, the survey asked other 'what if' questions regarding possible ways of coping in difficult times.

Methods of dealing with an unforeseen expenditure also differed substantially between payday loan users and non-users (Chart C). For an expenditure of \$500, 6 in 10 non-user families said they would use savings, almost double the proportion of the user families (33%). Also, the non-users more often stated that they would use a line of credit (19% versus 10%).<sup>11</sup>

**Chart C Methods to deal with unforeseen expenditures differ**

\* Significant difference at the 0.05 level or less between families who used payday loans and those who did not.  
 Source: Statistics Canada, Survey of Financial Security, 2005

Borrowing from a friend or relative was mentioned more often by payday loan users—27% compared with only 12%. More than one-quarter of these families could not handle an unforeseen expenditure of \$500, almost four times the rate for non-users (7%).

An unexpected expense of \$5,000 is a much greater hurdle. For something of this magnitude, 35% of families with no payday loans would use savings and 25% would use a line of credit; the comparable figures for

families with payday loans were 10% and 14%. These more mainstream financial approaches were mentioned more frequently by non-users of payday loans. Only 17% of non-users could not handle such an expense at all, compared with almost half of user families. Clearly, options differ, likely because of a combination of financial circumstances and differing ties to other credit vehicles.

### Summary

Payday loans are a small but growing part of the alternative consumer credit market providing financial services in Canada. Reports of exorbitant interest rates abound and the need to add controls and regulation to the industry has been discussed.<sup>12</sup>

The Survey of Financial Security sheds light on who borrows through payday loans and what family characteristics are related to using them. Age is key. Young families were three times more likely to have used payday loans than those aged 35 to 44, after controlling for other family characteristics.

Financial attributes are also related to the use of payday loans, even after controlling for other characteristics. Families with little savings or no credit cards,

### Logistic regression

Logistic regression estimates the probability of an event occurring (for example, borrowing money through a payday loan) based on a set of explanatory variables. This technique allows the relationship between each explanatory variable and the event to be examined, while holding all other specified variables constant. Odds ratios are reported based on the regression. They indicate whether certain variables increase or decrease the odds of using payday loans compared with a reference group, controlling for all other explanatory variables in the model. This article uses bootstrap weights to estimate the standard errors to account for the complex sample design used in the SFS.



particularly those who had been refused, were significantly more likely to have used payday loans. Without these options and faced with financial shortfall, these families may have turned to payday loans in an effort to bridge the gap between paycheques.

Families behind in bill or loan payments were more than four times as likely to have used payday loans, even after controlling for other key characteristics such as income and savings. Four in 10 families who borrowed money through payday loans had spending that exceeded income, substantially more than families who had not used payday loans. These factors indicate a relationship between financial difficulty and the use of payday loans.

Almost half of families who used payday loans had no one to turn to if they faced financial difficulty. More than one-quarter reported that they could not handle an unforeseen expenditure of \$500, and nearly half could not handle one of \$5,000. Mainstream methods such as using savings or lines of credit were mentioned less frequently by these families.

While the Survey of Financial Security does not directly tell us why families borrow through payday loans, important indicators of past and current financial difficulties suggest that families who do have few other options.

### Perspectives

#### ■ Notes

1 A rollover is the extension of a loan for a fee—typically a penalty fee plus an administrative fee and charges for the new loan (CMC 2004).

2 The Canadian Payday Loan Association argued that the annualized percentage rate is not an appropriate way of representing the cost of payday loans since they are meant to be short-term (Canada 2005, 31).

3 See Note 2.

4 Only a minuscule number of families had a major income recipient between 15 and 17.

5 The SFS is done at the family level. (“Has anyone in the family borrowed money through a payday loan?”) Since an unattached individual is a one-person family, only they could potentially use this service, compared with more than one member of a couple.

6 For details on how low-income cutoffs are calculated, see Statistics Canada (2006).

7 In relation to questions regarding net worth, the SFS asked about assets and debts at the time of the survey in May or June 2005. Here respondents were asked details of savings and chequing account balances.

8 See table in *Payday loans primer* for a comparison of the cost of borrowing using payday loans, cash advances on credit cards, overdraft protection, and lines of credit.

9 The life-cycle approach to household spending is summarized in Chawla and Wannell (2005). The life of a household is divided into three stages: *borrowing*, where newly formed households invest in themselves in expectation of rising income; *accumulation*, where households save surplus income in anticipation of retirement; and *dis-saving*, as households draw down their savings to finance retirement. These stages can be approximately allocated based on the age of the reference person: under 45, 45 to 64, and 65 or older.

10 Bankruptcy was not included in the logistic regression model because the bankruptcy could have taken place at any time in the past. Also, adding too many related variables to the model can lead to multicollinearity.

11 While the SFS asked respondents about outstanding balances on lines of credit, it did not ask specifically if they had a line of credit available.

12 Three provinces—Manitoba, Nova Scotia and Saskatchewan—have introduced legislation specifically applicable to payday lending. In Manitoba and Nova Scotia, the legislation has passed into law. Details of the legislation are available as follows:

Manitoba (Bill 25, 5th session, 38th Legislature):

<http://web2.gov.mb.ca/laws/statutes/2006/c03106e.php>

Nova Scotia (Bill 87, 1st session, 70th General Assembly):

[www.gov.ns.ca/legislature/legc/bills/60th\\_1st/3rd\\_read/b087.htm](http://www.gov.ns.ca/legislature/legc/bills/60th_1st/3rd_read/b087.htm)

Saskatchewan (Bill 43, 3rd session, 25th Legislature):

[www.legassembly.sk.ca/bills/PDFs/Bill-43.pdf](http://www.legassembly.sk.ca/bills/PDFs/Bill-43.pdf).

#### ■ References

Association of Community Organizations for Reform Now (ACORN) Canada. 2004. Vancouver. *Protecting Canadians' Interest: Reining in the Payday Lending Industry*. 36 p.

Canada. Senate. Standing Committee on Banking, Trade and Commerce. 2005. Evidence of Proceedings, Meeting of October 27, 2005. 38<sup>th</sup> Parl., 1<sup>st</sup> session. Issue 18.

Canada. Department of Justice. 2006. *Payday Lending Legislative Amendments*. Background. Ottawa. 2 p.

Canadian Payday Loan Association (CPLA). 2006. "What is a payday loan?" CPLA webpage. <http://www.cpla-acps.ca/english/aboutloans.php>.

Chawla, Raj K. and Ted Wannell. 2005. "Spenders and savers." *Perspectives on Labour and Income*. Vol. 17, no. 2. Summer. Statistics Canada Catalogue no. 75-001-XPE. p. 7-15.

Consumer Measures Committee (CMC). 2002. *Consultation Paper on Framework Options for Addressing Concerns with the Alternative Consumer Credit Market*. 12 p.

---. 2004. *Stakeholder Consultation Document on a Proposed Consumer Protection Framework for the Alternative Consumer Credit Market*. Office of Consumer Affairs. Industry Canada. Ottawa. 20 p.

Enviro-nics Research Group. 2005. *Understanding Consumers of Canada's Payday Loans Industry*. Presentation to the Canadian Association of Community Financial Service Providers. June 9, 2005.

Ernst and Young. 2004. *The Cost of Providing Payday Loans in Canada*. Tax Policy Services Group. 59 p.

Hassan, Eman. 2006. "Recall bias can be a threat to retrospective and prospective research designs." *The Internet Journal of Epidemiology*. Vol. 3, no. 2.

Horvath, Francis W. 1982. "Forgotten unemployment: Recall bias in retrospective data." *Monthly Labor Review*. Vol. 105, no. 3. March. p. 40-43.

Kirchhoff, Sue. 2006. "Breaking the cycle of payday loan 'trap'." *USA Today*. September 20. B1.

Kitching, Andrew and Sheena Starky. 2006. *Payday Loan Companies in Canada: Determining the Public Interest*. Library of Parliament. Parliamentary Information and Research Service. 14 p.

Lefebvre, Sophie. 2002. "Housing: An income issue." *Perspectives on Labour and Income*. Vol. 14, no. 3. Autumn. Statistics Canada Catalogue no. 75-001-XPE. p. 28-35.

Luffman, Jacqueline. 2006. "Measuring housing affordability." *Perspectives on Labour and Income*. Vol. 18, no. 4. Winter. Statistics Canada Catalogue no. 75-001-XPE. p. 48-57.

Ramsay, Iain. 2000. *Access to Credit in the Alternative Consumer Credit Market*. Paper prepared for the Office of Consumer Affairs, Industry Canada, and the Ministry of the Attorney General, British Columbia.

Statistics Canada. 2006. *Income in Canada, 2004*. Catalogue no. 75-202-XIE. Ottawa. <http://www.statcan.ca/english/freepub/75-202-XIE/75-202-XIE2004000.htm> (accessed March 28, 2007).

Stegman, Michael A. and Robert Faris. 2003. "Payday lending: A business model that encourages chronic borrowing." *Economic Development Quarterly*. Vol. 17, no. 1. February. p. 8-32.

**We welcome your views** on articles and other items that have appeared in *Perspectives*. Additional insights on the data are also welcome, but to be considered for publication, communications should be factual and analytical. We encourage readers to inform us about their current research projects, new publications, data sources, and upcoming events relating to labour and income.

Statistics Canada reserves the right to select and edit items for publication. Correspondence, in either official language, should be addressed to *Perspectives on Labour and Income*, 170 Tunney's Pasture Driveway, 9-A5 Jean Talon, Statistics Canada, Ottawa, Ontario K1A 0T6. Fax 613-951-4179; e-mail: [perspectives@statcan.ca](mailto:perspectives@statcan.ca).



# Fuelling the economy

Cara Williams

One of the hottest commodities today is a barrel of oil. While the price has fluctuated dramatically over the last several years, it has remained substantially higher than the December 2001 price of \$15.95.<sup>1</sup> The reasons for the increase are multi-faceted. First, world demand is increasing, particularly in newly developed countries such as China and India. Indeed, demand rose more in 2004 than in any other year since 1976, mainly because of China, which is now the second biggest user of oil after the United States. On the supply side, geopolitical conflicts have destabilized oil supplies, leading to increased prices. Also, much of the oil is now more difficult to extract—wells are deeper, drilling occurs offshore, special technology is needed for the oil sands. This translates to higher production costs and higher prices for consumers (see *The downside*). Canada is currently the eighth-largest producer of crude oil at about 2.5 million barrels per day. Current world demand is approximately 84 million barrels per day (CAPP n.d. a), while production stands at about 86 million barrels (Government of Alberta, DOE n.d. a).

With the second largest proven oil reserves in the world (after Saudi Arabia), Canada is well positioned as one of the few countries outside OPEC with significant prospects for production growth (National Energy Board 2005). Indeed, increased demand coupled with price hikes have led to consistent growth in the energy sector. In particular, the oil sands, which hold an estimated 175 billion barrels of oil, have seen further development (CAPP n.d. b).

Natural gas is also important, both for export and domestic consumption. Currently, Canada is the second largest exporter of natural gas after Russia (Government of Alberta n.d.). As oil prices have increased, so too have natural gas prices (although not for all the

same reasons). In general, the oil and gas industry in Canada is likely to continue to grow in terms of capital investment, revenue, jobs and wages.

## The downside

Any economic boom has positive and negative implications. On the positive side, increased economic activity usually translates into increased capital investment, as well as employment and wage growth. However, negative implications also arise—particularly if economic growth occurs rapidly. For example, infrastructure may not be able to keep up with growth in the affected region, leading to housing shortages and overcrowding in schools and hospitals. Because of the housing shortage in Fort McMurray, Alberta, hundreds of temporary housing units have had to be established for workers drawn to the region. Additionally, a boom such as the current one in Alberta can result in labour shortages in all industries, driving up wages and subsequently prices across the board. However, wage increases in Alberta have not been able to attract the needed labour, and many businesses have had to reduce their hours as a result of staffing shortages (Bennett 2006).

The oil and gas sector also has significant environmental impact on water, air and land. Environment Canada estimated that the energy sector as a whole (production and processing of oil, natural gas and coal; petroleum refining; and transportation by pipeline) accounted for about 20% of Canada's total greenhouse gas emissions in 2004 (Environment Canada et al. 2006). While all oil and gas sectors are working towards decreasing their energy use and developing or adopting pollution abatement technologies, it is clear that as production increases it will become increasingly more important to find and develop methods of reducing emissions.

The oil and gas industry also uses a significant amount of water. It is used for conventional drilling, for oil sands surface mining, and for *in situ* oil sands production where the sands are too deep to mine. Water is also used in oil sands upgraders, and in refineries and petrochemical companies (for more specific usages, see [www.waterforlife.gov.ab.ca](http://www.waterforlife.gov.ab.ca)). The upstream component of oil and gas accounts for about 7% of total water allocation in Alberta (about 37% of groundwater and about 6% of surface water). In response to concern over water usage, oil sands producers are now recycling up to 90% of the water they use (Centre for Energy n.d. b).

Cara Williams is with the Labour and Household Surveys Analysis Division. She can be reached at 613-951-6972 or [cara.williams@statcan.ca](mailto:cara.williams@statcan.ca).

Three component sectors define oil and gas: upstream, midstream, and downstream (see *Component industries in oil and gas*). The article first looks at economic activity in each component sector and then analyzes employment (see *Data sources and definitions*). Only effects directly related to the oil and gas industry are examined. The substantial spin-off effects into other industries such as construction and services are not included.

## Economic activity

### Upstream

As the price of oil and gas increases, so too does exploration and extraction of both conventional and non-conventional sources (see *The basics of oil and gas*). In 2004, the number of oil and gas wells drilled stood at 24,874, up from 18,480 in 2000. Production from Canada's enormous supply of non-conventional energy has also grown rapidly. Indeed, 42% of all domestic oil output in 2004 came from oil sands, and most of the increase in natural gas production since 2004 has come from coal-based methane (Cross 2006).

**Table 1 Production of crude oil**

	Total	Conventional		Non-conventional	
	Cubic metres ('000)		%	Cubic metres ('000)	%
1997	112,670	82,066	73	30,604	27
1998	117,082	82,847	71	34,235	29
1999	111,028	78,090	70	32,938	30
2000	116,360	80,971	70	35,389	30
2001	118,165	79,822	68	38,343	32
2002	126,877	83,901	66	42,976	34
2003	134,748	84,690	63	50,058	37
2004	139,286	81,769	59	57,517	41
2005	136,177	78,918	58	57,258	42

Source: Statistics Canada, Manufacturing, Construction and Energy Division

## Component industries in oil and gas

**Upstream**  
Exploration and extraction

➤ GDP = \$30.4 billion  
Jobs = 176,500

**Midstream**  
Pipelines; rail, truck and tanker transportation; storage

➤ GDP = \$5.1 billion (pipelines only)  
Jobs = 4,000

**Downstream**  
Refineries, gas distribution, oil product wholesalers, service stations, and petrochemical companies

➤ GDP = \$5.7 billion (excludes service stations and oil product wholesalers)  
Jobs = 117,100

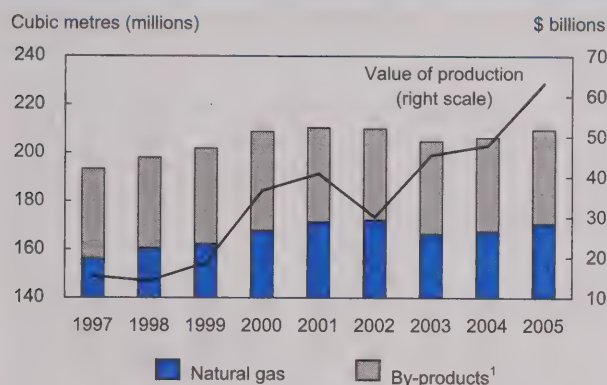
Sources: Statistics Canada, Income and Expenditure Accounts; Labour Force Survey, 2006

In terms of volume, crude oil production increased by 21% between 1997 and 2005. Over the same period, the value of production increased by 184% (Table 1). Total crude production in 2005 was 136,177,000 cubic metres with a value at \$45.2 billion, up from 112,670,000 cubic metres and a value of \$15.9 billion in 1997. Natural gas production (including by-products) increased by about 8% between 1997 and 2005 (from 193,320,000 to 209,534,000 cubic metres), but because of higher prices, the value of production increased by more than 312% (Chart A).

Since Canada's production of oil and natural gas surpasses domestic needs, much of it is sold on the world market. Not surprisingly then, crude oil and natural gas exports play an important role in international trade. In 2006 they



**Chart A While natural gas production volume increased 8%, its value quadrupled**



1 Includes pentane plus, propane, butane and ethane.

Source: Statistics Canada, Manufacturing, Construction and Energy Division

totalled \$64.9 billion, up from \$20 billion in 1997, with virtually all exports headed to the United States (Rowat 2006). Nevertheless, in central Canada, oil is imported for refining and consumption or re-export (950 Mb/d in 2004) (National Energy Board n.d.).

The extraction of oil and gas is complex and capital-intensive, particularly for non-conventional sources. When oil and gas prices are high, exploration and extraction of these reserves increase. Recent record prices have meant that capital expenditures for oil and gas extraction have grown substantially, far exceeding those in other industries. In 2005, capital investment in the oil and gas extraction industry (both conventional and non-conventional) was about \$45.3 billion, more than double the \$18.9 billion in 1997 (Chart B).

Because much of Canada's oil reserves are in non-conventional sources (for example, oil sands), much of the increase in capital expenditures went to this area. Indeed, capital expenditures for non-conventional crude oil increased a staggering 450% between 1997 and 2005, from \$1.9 to \$10.4 billion, illustrating the growing importance of this source. Given this enormous clout in the economy, it is not surprising that the upstream oil and gas sector contributed more than \$30 billion (1997 dollars) to GDP in 2006, up from \$25 billion in 1997, and is by far the largest of the three component sectors.

## Data sources and definitions

This paper draws on several Statistics Canada sources.

Data for crude oil and natural gas production and capital investment in the oil and gas extraction industry are from the Manufacturing, Construction and Energy Division.

Pipeline data originate from the **Survey of Monthly Oil Transport** and **Monthly Oil Pipeline Statement**, which cover the activities of all pipelines in Canada receiving and delivering crude oils, liquefied petroleum gases (propane, butane and ethane), and refined petroleum products.

Information on the number of gas stations and sales is from the **Retail Store Survey** and **Retail Chain Survey**.

All employment figures (including average hourly earnings) are from the **Labour Force Survey** and based on the North American Industry Classification System (NAICS).

### Upstream employment

Oil and gas extraction: NAICS 2111

Support activities for mining and oil and gas extraction: NAICS 2131

### Midstream employment

Pipeline employment, which includes pipeline transportation of crude oil: NAICS 4861; pipeline transportation of natural gas: NAICS 4862; and other pipeline transportation: NAICS 4869.

Because it is impossible to separate out employment related to the oil and gas industry for rail, truck and tanker transportation or for storage of oil and gas products, these have not been included. Thus the figures may somewhat underestimate total midstream employment.

### Downstream employment

Petroleum and coal products manufacturing (includes refineries and petroleum and coal products manufacturing): NAICS 3241

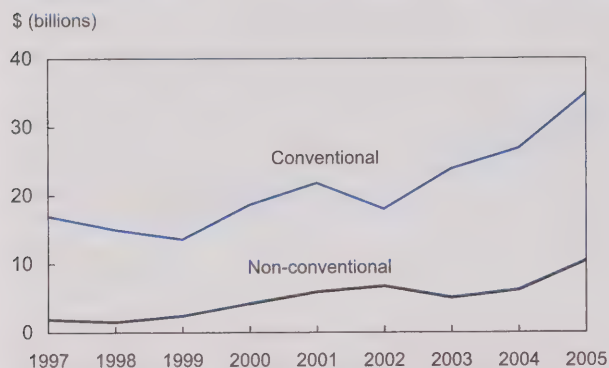
Natural gas distribution (utilities): NAICS 2212

Petroleum product wholesaler distributors: NAICS 4121

Gasoline stations: NAICS 4471

## Midstream

The midstream sector comprises pipelines; rail, truck and tanker transportation; and storage. Pipelines alone contributed about \$5 billion to GDP in 2006<sup>3</sup> with approximately 95% of Canada's crude oil and natural gas transported by this method (Centre for Energy n.d. a). Given the size of the country, it is not surprising that Canada has the longest pipeline network in the world for crude oil. Originally constructed in 1950 to run from Edmonton to Superior, Wisconsin, the Enbridge system (originally called the Interprovincial Pipeline) has been expanded over the years, and now

**Chart B Capital investment in extraction has increased sharply in recent years**

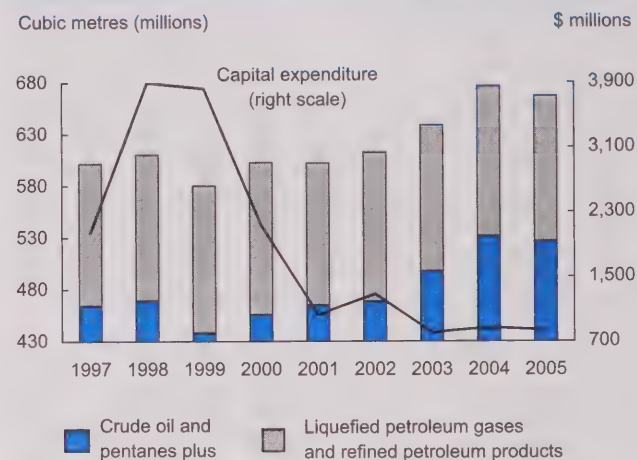
Source: Statistics Canada, Manufacturing, Construction and Energy Division

runs from Norman Wells in the Northwest Territories, through Alberta, south to Oklahoma, and east to refineries in Chicago and central Canada. Today 700,000 km of different-sized oil and gas pipelines criss-cross Canada (Government of Alberta, DOE n.d. b). The Canadian-operated ones transported 667 million cubic metres of crude oil and other petroleum products across the country in 2005, up from 602 in 1997, with capital expenditures in 2005 of about \$835 million (Chart C).

While pipeline movements of oil and gas are extensive, rail is another important distribution channel, with many shipments originating in Alberta and eastern Canada destined for customers in Canada, the U.S. and overseas. Of all petroleum products and hydrocarbon gases transported in 2004, 16.4 million tonnes were at some point carried by rail. Although Statistics Canada does not produce figures on freight revenues by type of commodity shipped, the 2005 annual report from CN rail noted that 16% (or \$1,096 million) of total freight revenue was associated with petroleum and chemical shipments, illustrating the economic importance of the midstream sector.

### Downstream

The downstream component is made up of refining and marketing, which includes refineries, gas distribution utilities, oil product wholesalers, service stations, and petrochemical companies. The GDP contribution

**Chart C After major expenditures in the late 1990s, Canadian-owned pipelines have recently been spending much less**

Sources: Statistics Canada, Monthly Oil Pipeline Transport; Monthly Oil Pipeline Statement

of the downstream sector (not including the wholesale or retail petroleum industries) was about \$5.7 billion in 2006 (1997 dollars).

Refineries process crude oil by sorting, splitting, reassembling and blending hydrocarbons. In 2006, 19 refineries were operating in Canada with a total refining capacity of about 330,000 cubic metres (about two million barrels) per day. Of the 19 refineries, 2 produced either asphalt or petrochemicals, while the others produced a range of petroleum products. Refinery utilization has been high over the last five years and is expected to remain at about 90% capacity (National Energy Board n.d.). Refineries in western Canada process only Canadian crude oil, while those in the rest of the country process both imported and domestic.

Petroleum product wholesalers (establishments primarily engaged in wholesaling crude oil, liquefied petroleum gases, heating oil, and other refined petroleum products) have seen pronounced sales growth over the past few years. Estimates of wholesale sales have increased from approximately \$60 billion in 2001 to \$87.5 billion in 2004.



## The basics of oil and gas

### Crude oil

Crude oil is a naturally occurring mixture of hydrocarbon compounds trapped in underground formations. Oil was produced as ancient vegetation and marine life died and settled on the bottom of streams, lakes, seas and oceans. Sediment covered this organic material, and subsequent heat and pressure changed it into oil. The vast majority of Canada's oil comes from the Western Canada Sedimentary Basin (WCSB) and offshore eastern Canada. The WCSB produces 88% of all oil in the country, the majority within Alberta. In eastern Canada, oil is found in and offshore Newfoundland and Labrador and off Nova Scotia.

Conventional crude oil comprises light, medium and heavy hydrocarbons. Light crude flows easily and when refined produces large amounts of transportation fuel such as gasoline, diesel and jet fuel. Heavy crude requires extra pumping or dilution to flow easily, producing primarily heating oil and a smaller amount of transportation fuel. Conventional crude oil is extracted by well drilling. It is called 'sweet' if it contains only small amounts of sulphur and 'sour' if the sulphur content is high. The average recovery rate for oil is about 30%—meaning that more than two-thirds of it stays in the ground and is not recovered because of cost or current technology (CAPP n.d. c).

Non-conventional crude oil differs from conventional in where it is found and how it is extracted. In Canada, the largest non-conventional source is the oil sands of Alberta (formerly called tar sands). The oil here is known as bitumen, and the sand and water in which it is found needs to be removed. Because bitumen is too thick to flow, it must be heated or diluted with lighter hydrocarbons. It takes about two tonnes of oil sand to produce one barrel of oil (Government of Alberta, DOE n.d. c).<sup>2</sup>

Currently, about 3,000 products are derived from crude oil. These include gasoline, ink, crayons, bubble gum, deodorant, dishwashing liquid, tires, ammonia, heart valves, eyeglasses, waxes, plastics, synthetic rubber, and asphalt.

### Natural gas

*This part of the country seems to have all hell for a basement and the only trapdoor appears to be in Medicine Hat.*  
—Rudyard Kipling on a visit to Alberta in 1907

In some parts of Canada, natural gas has been a source of energy since the 1800s, but it wasn't until the late 1950s and the completion of the TransCanada Pipeline that use of natural gas became widespread. Since then, demand has grown steadily, and today Canada is the third largest producer of natural gas in the world. Domestically, natural gas heats almost 50% of homes and is the main source of energy for 51% of the manufacturing sector (Canadian Gas Association n.d.).

Like crude oil, natural gas is a hydrocarbon-compound fossil fuel. Its main component is methane, but it also contains ethane, propane and butane. It is conventionally found in reservoirs several metres or kilometres below the earth's surface. Non-conventional sources include coal-bed methane, tight gas sands, gas shales, and gas hydrates, all of which are more difficult to extract (for more information see the Centre for Energy at [www.centreforenergy.com](http://www.centreforenergy.com)).

Natural gas is largely found in Alberta, but British Columbia and Saskatchewan also have resources. Known resources of recoverable conventional natural gas are estimated to be about 58 trillion cubic feet. Another 500 trillion cubic feet are thought to be available from coal-bed methane. However, it is not known how much of this can be recovered (Energy Information Administration 2007).

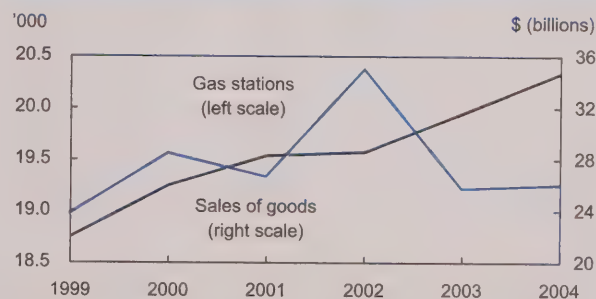
Natural gas is an energy source in several areas, providing fuel for furnaces, appliances, vehicles, electricity generation, steam-heat production, and co-generation of heat and electricity.

Another feature of the downstream oil and gas sector is the 19,200 gas stations found across the country. In 2004, their sales (gas and other products) totalled almost \$35 billion (Chart D). When consumers pull into a gas station, the upstream and midstream sectors of oil and gas remain in the background.

### Employment

Between 1997 and 2006, employment in Canada increased by about 20%. In the three oil and gas sector components, roughly 298,000 people were employed in 2006, an increase of about 22% over 1997 (Table 2).<sup>4</sup> Compared with other industries, jobs in all three components are much more likely to be held by men. In 2006, only 28% of jobs in the oil and gas industry were held by women, compared with 47% of jobs in

**Chart D The number of gas stations has plateaued but sales have continued to increase**



Sources: Statistics Canada, Retail Store Survey; Retail Chain Survey

other industries. Other differences include unionization status and hourly earnings. Although employees in oil and gas industries were less likely to be unionized (12% versus 32%), their hourly earnings were about 24% higher. These differences are even more pronounced for the individual components.

### Upstream—full-time, male and well-paid

Between 1997 and 2006, employment in oil and gas extraction grew by about 43%—from 55,000 to about 79,000.<sup>5</sup> In support industries, the growth over this period was about 88%, reaching 98,000 in 2006 (Table 3). Relative to other industries, employment in oil and gas extraction held constant, ranking 18th in both 1997 and 2006. Not surprisingly, most employment was in Alberta with its vast

**Table 2 Labour force characteristics**

	All industries		Oil and gas related		Non oil and gas	
	1997	2006	1997	2006	1997	2006
Employed	13,706.0	16,484.3	244.7	297.6	13,461.3	16,186.8
Self-employed	2,349.4	2,498.0	28.6	34.9	2,321.4	2,463.1
	'000					
<b>Sex</b>						
Men	54.5	52.9	74.6	71.8	54.1	52.6
Women	45.5	47.1	25.4	28.2	45.9	47.4
<b>Age</b>						
15 to 34	40.1	36.8	48.8	44.8	40.0	36.6
35 to 54	50.1	49.1	45.4	46.0	50.2	49.1
55 and over	9.7	14.1	5.8	9.3	9.8	14.2
<b>Union coverage<sup>1</sup></b>						
Yes	33.7	31.7	13.8	12.3	34.1	32.0
No	66.3	68.3	86.2	87.7	65.9	68.0
<b>Work schedule</b>						
Full-time	80.9	82.0	85.5	88.3	80.8	81.8
Part-time	19.1	18.0	14.4	11.7	19.2	18.2
<b>Average hourly earnings</b>	\$					
	12.92	16.73	14.80	20.64	12.88	16.66

1 Excludes self-employed

Source: Statistics Canada, Labour Force Survey

**Table 3 Upstream employment**

	Total		Extraction		Support industries	
	1997	2006	1997	2006	1997	2006
Employed	107.1	176.5	55.2	78.7	51.9	97.8
Self-employed	14.6	21.6	3.6	F	11.0	20.2
	'000					
<b>Sex</b>						
Men	81.0	76.7	75.4	67.5	87.1	84.0
Women	19.0	23.3	24.6	32.7	12.9	15.8
<b>Age</b>						
15 to 34	40.1	43.9	34.2	38.2	46.4	48.5
35 to 54	53.7	47.0	60.9	52.1	46.1	42.9
55 and over	6.2	9.1	4.9	9.7	7.5	8.6
<b>Union coverage<sup>1</sup></b>						
Yes	7.9	9.7	7.9	9.2	8.1	10.2
No	92.1	90.3	92.1	90.8	91.9	89.8
<b>Work schedule</b>						
Full-time	94.9	95.8	96.0	97.2	93.6	94.6
Part-time	5.1	4.2	4.0	2.8	6.4	5.3
<b>Average hourly earnings</b>	\$					
	17.24	24.21	20.47	30.36	13.79	19.26

1 Excludes self-employed

Source: Statistics Canada, Labour Force Survey

oil and gas reserves. Indeed, approximately 75% of jobs in the industry were in this province.

Workers in the oil and gas industry are much more likely to work full time. In 2006, about 97% of those in oil and gas extraction worked full time (95% in support industries) compared with about 82% in other industries. They were also much less likely to be unionized (9% versus 32%).

Their hourly earnings in 2006 were also substantially higher. While the average was \$16.73 for the labour market as a whole, earnings were about 80% higher in oil and gas extraction (\$30.36). The gap has not always been so large. In 1997, employees in oil and gas extraction earned only 58% more per hour than the average worker (\$20.47 versus \$12.92).



It is impossible to determine the exact employment figure for activities supporting oil and gas extraction since the mining industry is also included here. That said, in 2006, employment in the support activities for oil, gas and mining industries was almost 98,000, an increase of 88% since 1997. And while it is not possible to determine what percentage of the increase was a result of the oil and gas boom, it has clearly played an important role in employment growth.

**Midstream—Pipeline workers: above average wages and predominately male**

Because it is not possible to separate petroleum products from the transportation and storage of other commodities, this section deals only with the pipeline industries. In 2006, employment in pipeline industries was about 4,000, about 44% lower than the 1997 figure of just over 7,000 (Table 4). Just as for oil and gas extraction, workers in these industries are primarily male and have substantially higher average hourly earnings (\$34.36 versus \$16.73).

**Downstream—young, low-paid and non-unionized**

While upstream and midstream employment in the oil and gas sector consists of full-time well-paid jobs, downstream employment varies widely. This is not surprising given the wide array of industrial components. Overall, the downstream sector in 2006 employed approximately 117,000 individuals in a variety of industries (Table 5).<sup>6</sup> Because employment is quite different in each one, they are examined individually.

Petroleum and coal products manufacturing includes refineries as well as asphalt paving, shingles, and other petroleum and coal manufacturing. Employment in this indus-

**Table 4 Midstream employment**

	1997	2006
	'000	
Employed	7.1	4.0
Self-employed	F	F
<b>Sex</b>	%	
Men	81.7	80.0
Women	F	F
<b>Age</b>		
15 to 34	40.9	F
35 to 54	52.1	65.0
55 and over	F	F
<b>Union coverage<sup>1</sup></b>		
Yes	21.1	F
No	78.9	100.0
<b>Work schedule</b>		
Full-time	100.0	100.0
Part-time	F	F
<b>Average hourly earnings</b>	\$	
	21.83	34.36

1 Excludes self-employed

Source: Statistics Canada, Labour Force Survey

try totalled about 16,400 in 2006, down from almost 21,000 in 1997. Much like oil and gas extraction, this field was predominately male, non-unionized, and full-time. Average hourly earnings, at \$28.19, were much higher than the general working population, and higher than any other component in the downstream sector.

Employment in petroleum product wholesaling was virtually the same in 2006 and 1997, about 11,500. This industry was also predominately male (61%), and virtually all worked full time. Not surprisingly, hourly earnings were above average at \$18.85. Employment in this industry was primarily in Alberta, Ontario and Quebec.

Employment in the distribution of natural gas rebounded somewhat in 2006 after declining steadily between 1997 and 2005. In 2005, it employed approximately 14,800 people, down from 20,600 in

1997, but the level rose to 15,300 in 2006. This industry is indicative of most oil and gas industries in that hourly earnings were substantially higher than the average (\$27.12 versus \$16.73), and almost all workers were full-time. Interestingly, it had the highest unionization rates of all oil and gas industries at about 45%.

Gasoline stations illustrate the varied employment in the downstream sector. Employment at gas stations was far higher than in any other industry in the midstream or downstream sectors. Not surprisingly, workers here had the lowest average earnings and were much younger. In 2006, some 74,000 individuals worked at gas stations across the country, down from almost 78,000 in 1997. Nearly 60% were under 35, compared with about 30% in the other downstream industries. Hourly earnings, at \$8.61, were strikingly lower than in any other oil and gas industry, and 50% lower than the overall average. Because employment does not depend on where oil and gas are extracted, jobs are spread throughout the country in line with population distribution—26% in Ontario, 21% in Quebec, 16% in British Columbia, and 13% in Alberta.

## Summary

With the discovery of oil at Leduc well no. 1 in Alberta in February 1947, Canada was transformed almost instantly from an oil-poor to an oil-rich nation. Recent development of non-conventional sources of oil and gas has further augmented the importance of this industry to the Canadian economy. By 2006, the contribution to GDP of all sectors of the oil and gas industry had exceeded \$40 billion (1997 dollars), and direct employment totalled almost 300,000.

Table 5 Downstream employment

	Total		Manufacturing		Wholesale		Natural gas distribution		Gas stations	
	1997	2006	1997	2006	1997	2006	1997	2006	1997	2006
	'000									
Employed	130.5	117.1	20.9	16.4	11.3	11.6	20.6	15.3	77.7	73.9
Self-employed	13.9	13.4	F	F	1.8	F	F	F	11.8	11.9
	%									
<b>Sex</b>										
Men	69.0	64.1	82.3	87.2	70.8	61.2	59.2	71.2	67.6	57.9
Women	31.0	35.9	17.7	12.8	29.2	38.8	40.8	28.1	32.4	42.1
<b>Age</b>										
15 to 34	56.3	46.7	32.1	20.7	37.2	30.2	32.5	26.1	71.9	59.3
35 to 54	38.3	43.6	61.2	72.0	53.1	56.0	59.7	60.8	24.3	31.9
55 and over	5.4	9.6	F	F	F	13.8	7.8	13.1	3.7	8.8
<b>Union coverage<sup>1</sup></b>										
Yes	18.0	15.8	31.4	31.7	F	F	50.5	45.4	5.2	4.8
No	82.0	84.2	68.6	68.3	91.6	87.8	49.5	54.6	94.8	95.2
<b>Work schedule</b>										
Full-time	77.2	76.8	94.7	99.4	94.7	92.2	94.7	95.4	65.3	65.4
Part-time	22.9	23.2	F	F	F	F	F	F	34.7	34.6
	\$									
Average hourly earnings	12.42	14.78	22.03	28.19	14.18	18.85	20.78	27.12	7.38	8.61

1 Excludes self-employed

Source: Statistics Canada, Labour Force Survey

In the upstream sector, which comprises oil and gas extraction, investment and production have become driving forces in the economy. Indeed, between 1997 and 2005, investment in oil and gas extraction more than doubled from \$18.9 billion to \$45.3 billion, far exceeding any other industry. While production of natural gas levelled off in 2005, production of crude oil increased by 21% over the same period. Employment in this sector reached approximately 177,000 in 2006, and average hourly earnings were about 45% higher than in the labour market in general.

The midstream component of oil and gas is made up of transportation and storage. In Canada, 700,000 kilometres of pipelines carried approximately 700 million cubic metres of petroleum products in 2005 and contributed about \$5.1 billion to GDP. Employment related to pipelines was relatively small in 2006 with only 4,000 people.

The downstream sector of oil and gas includes refineries, petroleum manufacturing and wholesale distribution, utilities, and gas stations and employs about 117,000. Currently the 19 refineries in Canada have

the capacity to process 330,000 cubic metres of petroleum per day. For many consumers, the closest they get to the oil and gas industries is when they pull into one of over 19,000 gas stations in Canada.

Today Canada is recognized as an important player in terms of oil and natural gas. As global supplies dwindle, it becomes profitable to develop resources that are more difficult to extract—such as the oil sands. If geopolitical tensions remain high in other oil-producing areas of the world, Canada's role will become even more important.

### Perspectives

#### Notes

1 This figure represents the per barrel refinery acquisition cost of imported crude oil.

2 A standard barrel of oil contains 159 litres. A barrel of oil when refined yields 72 litres of gasoline. Barrels are referred to as 'bbl' because in the past the only barrels guaranteed to contain 42 US gallons were blue barrels manufactured for Standard Oil. This has become the standard.



3 Unfortunately, it is possible to get GDP numbers only for pipelines. Information on transportation of crude oil products by rail, truck or tanker and on storage of petroleum products is not available.

4 This article looks at direct not indirect employment. For example, construction has increased substantially in Alberta, partly as a result of the boom in the oil and gas industry. This indirect employment is not included.

5 Employment figures are available only for oil and gas extraction as a whole; employment for the natural gas sector and the crude oil sector cannot be separated.

6 Unfortunately, it is not possible to separate out employment for petrochemical companies, so these are not included in employment counts for the downstream sector.

## ■ References

- Bennett, Dean. 2006. "Red-hot Alta: Economy puts life on the boil; Albertans find quality of life beginning to evaporate." *New Brunswick Telegraph-Journal*. August 4. C3.
- Canadian Association of Petroleum Producers (CAPP). n.d. a. "Energy prices." Web page. [http://www.capp.ca/default.asp?V\\_DOC\\_ID=1142](http://www.capp.ca/default.asp?V_DOC_ID=1142) (accessed April 17, 2007).
- . n.d. b. "Oil sands resources, production and projects." Web page. [http://www.capp.ca/default.asp?V\\_DOC\\_ID=1162](http://www.capp.ca/default.asp?V_DOC_ID=1162) (accessed April 17, 2007).
- . n.d. c. "Producing oil and natural gas." Web page. [http://www.capp.ca/default.asp?V\\_DOC\\_ID=33](http://www.capp.ca/default.asp?V_DOC_ID=33) (accessed April 18, 2007).
- Canadian Gas Association. n.d. "General overview: Other facts and figures." Web page. <http://www.cga.ca/about/facts.htm> (accessed April 17, 2007).
- Centre for Energy™. n.d. a. "How is oil transported?" Web page. <http://www.centreforenergy.com/silos/oil/generator.asp?xml=%2Fsilos%2Foil%2FoilOverview07XML%2Easp&menu=0,6&template=1,1> (accessed April 17, 2007).
- . n.d. b. "Water use." Web page. <http://www.centreforenergy.com/silos/ong/ongEnvironmentusOilAndGasIndEnvWater01.asp?PostID=> (accessed April 18, 2007).
- Cross, P. 2006. "The year in review: The revenge of the old economy." *Canadian Economic Observer*. Vol. 19, no. 4. April. Statistics Canada Catalogue no. 11-010-XIB. <http://www.statcan.ca/english/freepub/11-010-XIB/00406/featureTOC.htm> (accessed April 13, 2007).
- Energy Information Administration. 2007. "Natural gas." Country Analysis Briefs: Canada. Web page. <http://www.eia.doe.gov/emeu/cabs/Canada/NaturalGas.html> (accessed April 30, 2007).
- Environment Canada, Statistics Canada and Health Canada. 2006. *Canadian Environmental Sustainability Indicators, 2005*. Statistics Canada Catalogue no. 16-251-XIE. <http://www.statcan.ca/english/freepub/16-251-XIE/2005000/intro.htm> (accessed April 17, 2007).
- Government of Alberta. n.d. "Industry and Economy." Web page. <http://www.gov.ab.ca/home/index.cfm?Page=1477> (accessed April 17, 2007).
- Government of Alberta, Department of Energy (DOE). n.d. a. "Oil facts." Web page. <http://www.energy.gov.ab.ca/1960.asp> (accessed April 17, 2007).
- . n.d. b. "Natural gas interesting facts." Web page. <http://www.energy.gov.ab.ca/1956.asp> (accessed April 18, 2007).
- . n.d. c. "Energy facts." Web page. <http://www.energy.gov.ab.ca/1899.asp> (accessed April 18, 2007).
- National Energy Board. 2005. *Short-term Outlook for Canadian Crude Oil to 2006*. September. Calgary. 58 p.
- . n.d. "Energy pricing information for Canadian consumers. Crude oil and petroleum products." Web page. [https://www.neb.gc.ca/energy/EnergyPricing/Industry/CO\\_e.htm](https://www.neb.gc.ca/energy/EnergyPricing/Industry/CO_e.htm). (accessed April 17, 2007).
- Rowat, Miles Ryan. 2006. *Boom Times: Canada's Crude Petroleum Industry*. Statistics Canada Catalogue no. 11-621-MIE, no. 47. Analysis in Brief series. <http://www.statcan.ca/english/research/11-621-MIE/11-621-MIE2006047.htm> (accessed April 17, 2007).

# GDP and employment growth

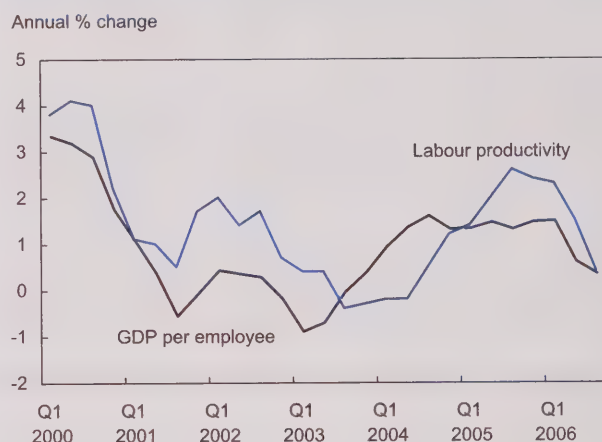
Philip Cross

A major economic development in 2006 was a slowdown in output growth but continued steady gains in employment. Over the long term, output growth typically exceeds employment growth by over 1% a year, reflecting the upward trend of productivity. The convergence of output and employment gains late in 2006 implies a diminution of productivity growth.

Output per employee and labour productivity are often treated as interchangeable concepts. However, the two have differences that can cause these series to diverge at times (Chart A). Most importantly, official labour productivity covers only the business sector, which excludes the 15% of gross domestic product (GDP) in the non-business sector (bypassing the conceptual problems of measuring productivity growth in this sector). As well, productivity is calculated as output per hour worked, not per employee. Hours worked are affected by changes in multiple jobholding, the mix of full- and part-time positions, and the length of the workweek. When this paper refers to productivity rather than output per employee, it is the data on business sector GDP per hour worked that are being used. Unless otherwise noted, the employment data come from the Labour Force Survey (LFS), while total output is aggregate real GDP, including both the business and non-business sectors.

The paper focuses on factors that contributed to the slowdown of both output per employee and productivity in 2006. Over the long run, productivity growth depends on population structure and skills, capital investment, research and innovation as well as institu-

**Chart A** Output per employee and productivity can diverge at times



Sources: Statistics Canada, Labour Force Survey; Income and Expenditure Accounts

tional factors such as taxes and trade regulations. However, since most of these variables were little changed last year (except for some shifts in population and investment), they do not figure prominently in this paper.

## The cyclical setting

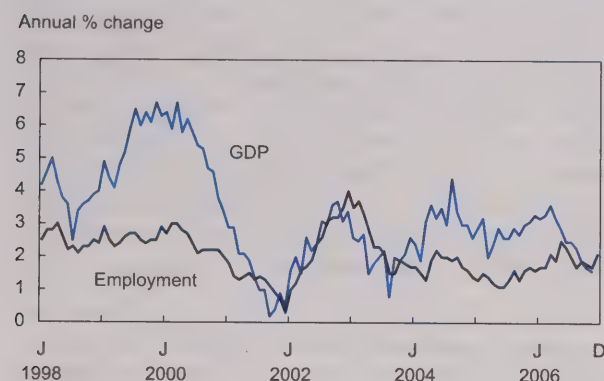
Output growth often slows relative to employment growth for short intervals during recessionary periods as firms hoard some labour while cutting output. As recently as 2002 and 2003, output growth fell further below job growth and for a longer period than in 2006.

In fact, a narrowing of the gap has been the rule, not the exception, ever since the economy began to recover from a stall late in 2001 (Chart B). Year-over-year growth in output per employee was below 1% in

*Philip Cross is with the Current Economic Analysis Division. He can be reached at 613-951-9162 or [philip.cross@statcan.ca](mailto:philip.cross@statcan.ca). The research paper Recent Trends in Output and Employment from which this article is adapted is available on the Statistics Canada Web site at <http://www.statcan.ca/english/research/13-604-MIE/13-604-MIE2007054.pdf>.*



**Chart B The gap between employment and GDP changes often narrows**



Sources: Statistics Canada, Income and Expenditure Accounts

44 of the last 69 months, and negative for 16 of the 26 months between July 2001 and August 2003. Output growth struggled to keep up with employment growth most of the time—falling behind late in 2001, barely keeping ahead in 2002, and slipping below again in much of 2003. Only in 2004 and 2005 did output growth clearly exceed job gains, implying positive labour productivity growth. Even then, the productivity gains were far short of those in 1999 and 2000. So the convergence of output and employment late in 2006 is hardly new.

In retrospect, the slowdown of output per employee in 2002 and 2003 (confirmed by the official estimates of labour productivity) is more surprising than in 2006. The economy then was recovering from the near recession in 2001 caused by the bursting of the high-tech bubble and the shock of the September 11 attacks. Normally, the initial recovery from a cyclical slump in the economy generates large productivity gains as previously underutilized resources are put back to work. The situation in 2006 was the opposite. An economy operating at almost full employment, especially in Western Canada where growth was concentrated, would be more likely to show weak productivity growth.

Many transitory factors helped depress GDP growth in 2003, including the SARS epidemic, the discovery of mad cow disease, the power blackout in Ontario,

fires in B.C., Hurricane Juan in Nova Scotia, and the start of the Iraq war. Altogether, these events resulted in almost no growth in GDP in the middle two quarters, when output growth trailed employment growth.

Comprehensive labour productivity data by industry are available for 2003. Interestingly, many of the same goods-producing industries whose productivity sagged in 2006 also struggled in 2003. Oil and gas saw productivity fall 7%, even as prices began to climb sharply. Manufacturing productivity was flat as firms faced the beginning of a sharp appreciation in the exchange rate. The sluggishness of productivity was widespread in manufacturing in 2003, just as it was in 2006.

Services contributed more to the productivity slowdown in 2003 than in 2006. Travel-related services such as accommodation and food obviously were severely affected by the SARS crisis in the first half of 2003, but they did not cut their staff to the degree warranted by demand (called labour hoarding).

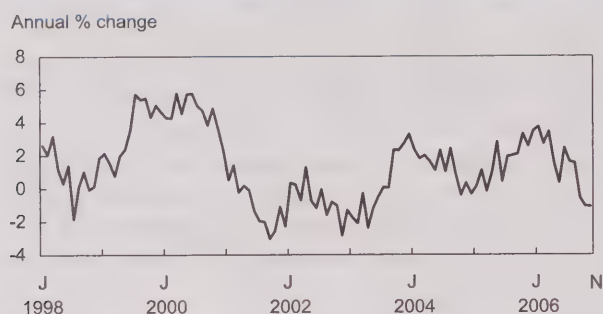
Nor is it unusual for Organisation for Economic Co-operation and Development (OECD) countries to experience two (or more) years of little productivity growth. Just since 2000, 10 of the 29 OECD countries with data available experienced such an episode. Interestingly, Norway and Australia are both currently experiencing little or no growth in output per employee. Like Canada, both have large natural resource bases—a source of much of the productivity slowdown in Canada.<sup>1</sup>

Some of the attention paid to the slowdown of output per employee late in 2006 may be due to concerns about a repeat of the 2002–2003 episode, which lasted two years. But the 2006 episode could also be transitory, with productivity growth quickly resuming as in 1998. Analyzing the 2006 trend in productivity by industry is the first step in understanding the reasons behind the slowdown.

### Industry trends

Most of the 2006 downturn in output per employee originated in goods-producing industries (Chart C), down 1.9% between December 2005 and November 2006. The drop largely reflected output in these industries switching from 3.3% growth late in 2005 to a decline of 1.9% during 2006.

**Chart C The 2006 downturn in output per employee was driven by goods production**



Sources: Statistics Canada, Labour Force Survey; Income and Expenditure Accounts

Within the goods-producing sector, almost all industries posted lower productivity during the first three quarters of 2006 (Table). Output per hour worked declined by nearly 10% in the resource sector, shaving a full 1% from overall productivity growth (Chart D). Mining and oil and gas extraction led this drop, as output grew slowly and employment raced ahead by over 10%, the most of any industry.

In recent years, the productivity of new discoveries of conventional oil and gas has fallen as the industry moved from easy-to-exploit fields in the west to less-productive sources.<sup>2</sup> Output in non-conventional oil projects, for example, now accounts for nearly half of the oil produced in Canada. And, as output from non-conventional sources has risen, output per employee in oil and gas has fallen sharply.

Last year's drop in productivity in mining, oil and gas was part of a long-term downward trend. The declining productivity of conventional wells and the shift to lower-productivity output from the oil sands is reflected in a 28% drop in labour productivity in the industry since its peak in 1999 (Chart E). Most of this reflects a 60% hike in employment in the oil and gas sector, almost all in Alberta. The employment increase was led by the oil sands, which hired thousands of workers on megaprojects that will not begin producing oil for years. These employees are involved in logistics, management and recruiting; those actually building the plant are classified in construction.

Events specific to the last two years aggravated this long-term downward trend. Oil sands output was depressed in 2005 by a major fire, which halted production at the largest producer for nearly nine months. The resumption of production at this plant helped

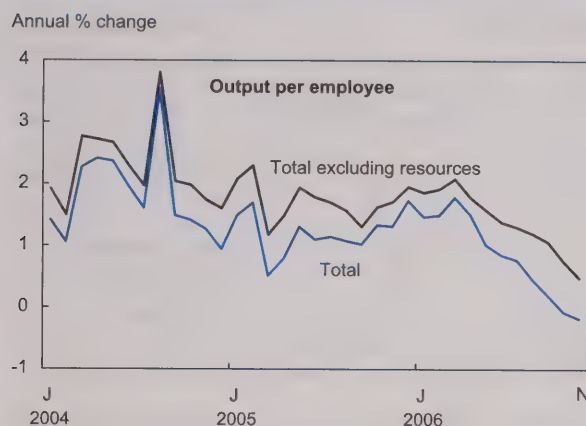
**Table Labour productivity by industry**

	2005				2006		
	Q1	Q2	Q3	Q4	Q1	Q2	Q3
	Year over year growth						
<b>Goods</b>	0.1	0.7	1.9	2.6	1.7	0.3	-1.7
Agriculture, forestry, fishing and hunting	8.7	5.4	2.2	-0.4	0.8	-2.3	-7.8
Mining and oil and gas extraction	-8.9	-8.1	-5.4	-4.9	-5.4	-10.6	-9.6
Utilities	2.2	2.5	3.5	0.0	-2.4	-1.0	-2.6
Construction	-2.2	-2.0	0.2	1.3	0.8	3.3	1.5
Manufacturing	1.8	3.2	4.1	5.4	3.8	0.8	-1.2
<b>Services</b>	1.8	2.7	3.3	2.7	3.3	2.8	1.8
Wholesale trade	4.6	8.0	8.2	8.7	10.0	7.8	6.9
Retail trade	3.8	2.4	2.0	1.2	3.2	4.7	4.3
Transportation and warehousing	1.9	2.7	5.7	5.6	3.5	2.9	0.2
Information and culture	0.6	0.9	8.6	8.2	7.0	4.8	-0.3
Finance, insurance and real estate	-0.7	-1.1	-2.3	-3.6	-2.4	-1.9	0.0
Professional, scientific and technical	1.8	2.1	1.5	1.0	0.8	0.7	-0.3
Business, building and other support services	-0.9	0.5	2.1	2.0	1.4	1.6	0.5
Arts, entertainment and recreation	-0.6	4.3	5.1	5.9	4.3	4.7	-0.1
Accommodation and food	-1.1	2.5	3.4	3.8	4.6	0.3	-0.1
Other services	1.6	2.8	3.0	2.0	4.1	3.3	2.3
<b>Business sector</b>	1.4	2.0	2.6	2.3	2.3	1.6	0.4

Sources: Statistics Canada, Income and Expenditure Accounts; Labour Productivity Measures



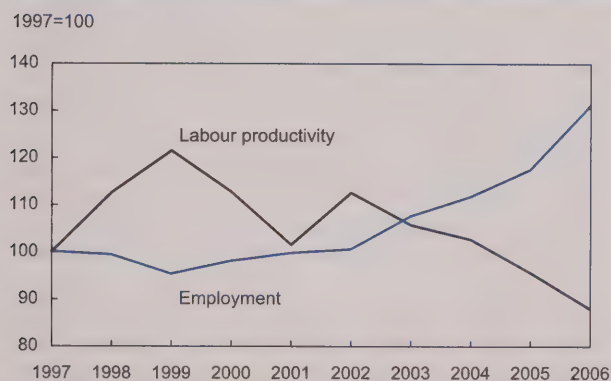
**Chart D The resource sector cut overall productivity growth**



Sources: Statistics Canada, Labour Force Survey; Industry Measures and Analysis

boost oil sands output in 2006. Because productivity in the oil sands is less than for other oil sources, this see-saw movement in production in 2005 and 2006 contributed to lower productivity growth last year (because of the increased share of low-productivity oil output in 2006 after a decline in 2005). As the oil sands gears up production, output per employee will

**Chart E The drop in mining productivity reflects sharp employment growth**



Sources: Statistics Canada, Survey of Employment, Payrolls and Hours; Income and Expenditure Accounts

increase, even if the level is not as high as from conventional fields. More generally, the extraction of oil from the oil sands will likely become more efficient over time.

This situation highlights one of the pitfalls in looking at short-run movements in productivity. Conceivably, productivity could be rising within every component industry, but these gains could be masked by a shift from industries with high productivity to those with lower productivity, leading to a drop in overall productivity.

As well, oil production last year was hampered by a number of disruptions. These included accidents at the Hibernia and Terra Nova platforms offshore from Newfoundland where productivity is relatively high, costing months of production. Understandably, given the shortage of labour in the oil patch, firms kept their staff during these interruptions.

Mining outside of oil and gas is increasingly located in remote parts of the country or requires digging deeper into the earth's crust. The best example is diamond mining, which currently is located almost exclusively in the Northwest Territories. Some of the drop in productivity in metal mines reflects the exhaustion of the most productive sources, just as with conventional oil and gas. The most obvious example is gold mining, where annual output has fallen steadily since 2001.

Several of the largest mining industries experienced production difficulties in 2006 as strikes reduced output of nickel and copper in the fall. Since the LFS counts strikers as still employed, output per employee is lowered. (Hours worked reflects the strike absences, so labour input in the productivity measures is not affected.) Potash output was curtailed during protracted contract negotiations with buyers in China.<sup>3</sup> Work stopped on the world's largest uranium project at Cigar Lake in October because of flooding, delaying sales for years (Hoffman 2007). As with oil and gas, shortages of labour induced employers to keep workers on the payroll when production was temporarily disrupted.

None of these problems have recurred so far in 2007, so some recovery in productivity can be expected. Potash producers signed deals with Chinese buyers early in the year, new labour agreements averted a strike in the nickel industry, and the ice road to mines in the north posted its second-earliest opening date.

Productivity fell in utilities last year. Mild winter weather depressed demand for electricity and gas at both the start and the end of the year. Not surprisingly, utilities did not lay off staff since they had no way of knowing when demand would jump (as the recent bout of cold weather illustrated).

Productivity in agriculture, forestry and fishing fell steadily throughout 2006. A poor grain crop helped dampen farm output. Nevertheless, agricultural employment rose slightly during the year. Interestingly, all of the increase originated in central Canada, led by southwestern Ontario. There, many people who had farms but worked in factories lost their primary job. As a result, they then reported farming as their primary job, raising employment in agriculture. This is a good example of how events can produce unusual movements in industry output per worker in the short term.

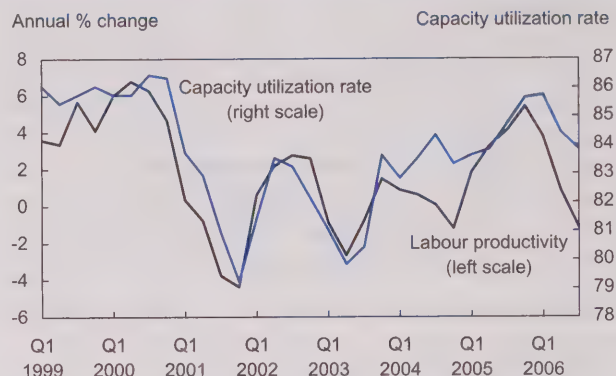
Forestry experienced one of the largest swings in the growth of output per worker between 2005 and 2006, from double-digit increases to double-digit declines. The rapid increase in 2005 reflected the consolidation of output in large, more efficient mills in B.C. and the ramping-up of output as the U.S. housing market peaked. The severe slump in U.S. housing demand last year depressed output. This was compounded by the closing of many small mills in eastern Canada late in the year when Quebec lowered its harvesting quota for timber by 20% and the softwood lumber agreement with the U.S. took effect.

## Manufacturing

Output per employee declined in manufacturing in 2006 following two years of growth. Factories so far this decade have not come close to matching their stellar productivity gains during the high-tech boom in the late 1990s.

The downturn in manufacturing productivity reflects a slump in output, which lowered capacity utilization (the main determinant of productivity in the short term). Manufacturing output fell 4.8% in the first 10 months of the year, recovering slightly at year-end, and productivity typically falters during contractions (Chart F). While the rising dollar has given manufacturers a strong incentive to boost productivity every year since 2003, this was easier to achieve in 2004 and 2005 when output rose 1.9% and 0.7% respectively. When factory output fell in 2001 and 2002, manufacturers saw productivity also retreat.

**Chart F The downturn in manufacturing productivity reflects a slump in output**



Sources: Statistics Canada, Income and Expenditure Accounts; Labour Productivity Measures

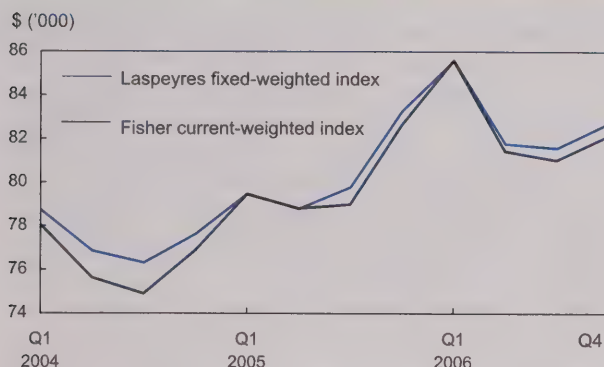
What of the argument that the re-structuring of industries, especially in manufacturing, should transfer resources from low- to high-productivity plants? The economy in 2006 saw many factories close in low-productivity industries such as textiles, clothing, furniture and even autos. Meanwhile, growth continued in high-productivity and capital-intensive industries such as petroleum refining. Surely this should have boosted overall productivity?

A statistical test of the theory that employment, on balance, was being transferred to more productive industries was conducted by constructing a Laspeyres (fixed-weighted) index of output in manufacturing. In layman's terms, this holds the weight of each industry constant at its 2003 share of employment. Almost no difference from the Fisher current-weighted index currently used was seen (Chart G). This surprising result arises because, while labour productivity was higher in some industries whose share of output was higher, their productivity was nevertheless falling throughout 2006. As well, output fell in some industries with high productivity, notably primary metals and computers and electronics.

These results are consistent with past research showing that inter-industry shifts do not have a large impact on overall productivity growth in the short term. Productivity ultimately depends on actual gains within specific industries, not shifts between industries with



**Chart G Shifts in manufacturing employment had little impact on overall productivity**



Sources: Statistics Canada, Income and Expenditure Accounts; Labour Productivity Measures

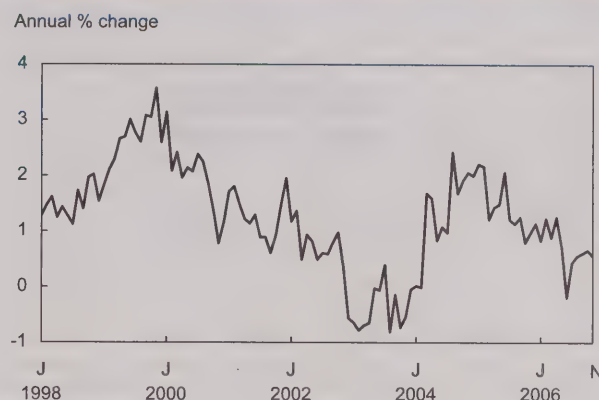
different productivity levels. Productivity in manufacturing last year was sluggish across almost all industries, swamping the effect of inter-industry shifts. Falling productivity in industries such as aerospace, primary metals, paper and petroleum may reflect specific industry events such as supply disruptions or strikes. It may also reflect a natural inclination to temporarily relax close scrutiny of costs when presented with sudden great wealth, such as occurred in metals and petroleum.<sup>4</sup>

## Services

Overall, output per employee in services escaped the large deceleration recorded for goods, continuing to grow at about its long-term average, and well above the SARS-induced slump in 2003 (Chart H). Several industries posted solid gains, notably consumer-related industries, which benefited from strong demand. Still, growth was restrained by a shift to public and business services where, by definition, productivity growth is limited.

Nearly 40% of monthly GDP growth in services is estimated using employment. For most, largely in the public sector, this is due to the conceptual difficulty in measuring output. Since no market price exists for the output of these services, Canada follows the same accounting practice as the U.S. of using labour input growth (adjusted in some industries for changes in the

**Chart H Output per employee in services continued to grow at its long-term average**



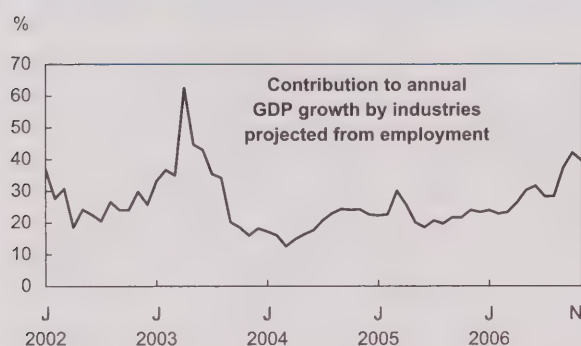
Sources: Statistics Canada, Labour Force Survey; Income and Expenditure Accounts

quality of the labour force) as the proxy for real output growth. As a result, productivity growth in these industries, by definition, is limited. While the non-business sector is excluded from the official measure of labour productivity, it does affect GDP per employee, and hence has influenced the current debate.

Output growth in 2006 was heavily concentrated in industries where employment is used as the proxy for output growth. As of November, year-over-year growth in these industries was 2.1%, compared with 1.3% in the rest of the economy. This is a reversal from both 2004 and 2005 when they grew at only half the rate of other services. Such industries accounted for about 40% of the year-over-year growth of total GDP by the end of 2006, doubling their contribution at the start of the year (Chart I). This reflects both increased activity in these industries and slower GDP growth in other industries.

The increase of nearly 20 points in the share of GDP growth occurring in these industries reduced overall output per employee by 0.1 points during 2006. The expansion was led by more spending on health care services outside hospitals. As well, demand picked up for religious and charitable organizations. These gains outweighed a sharp slowdown for education and recreation services.

**Chart I Output growth in 2006 heavily concentrated where GDP projected from employment**



Source: Statistics Canada, Income and Expenditure Accounts

Output in some business services is also projected using employment growth. This is most common for industries with no other source of monthly data, such as professional, scientific and technical services.<sup>5</sup> These industries grew faster than the rest of the economy. However, because they are a fraction the size of the public sector, they had little impact on overall productivity growth.

Excluding the non-business sector, the year-over-year growth of labour productivity in services hit 1.8% in the third quarter, down from 2.7% at the end of 2005. Growth was led by wholesale and retail trade, continuing a trend of large productivity gains in these industries since 2002. Wholesalers and retailers have benefited from lower import prices since the dollar began to rise in 2003, while the shift to big-box stores also boosted productivity.

Some services saw productivity growth slow during 2006. Not all these decreases are necessarily a negative development. For example, the accommodation and food industry saw productivity decline slightly as it started to resolve the labour shortages that hampered its growth (but boosted measured productivity) in 2005. The biggest turnaround was in Alberta, where a 12% year-over-year drop in jobs in December 2005 was followed by a 9% gain during 2006. Similarly, the transportation industry was able to find more labour in 2006 after employment fell in 2005. Transportation

output has grown steadily in recent years, reflecting the turnaround in the airline industry (after severe losses due to September 11<sup>th</sup> and SARS) and the boom in shipping commodities and containers by rail and water (especially to and from Asia).

The calculation of industry output per employee is sometimes impossible for definitional reasons. The best example is owner-occupied housing. The National Accounts follows standard international practice and treats homeowners as renting from themselves. This estimate, totalling \$90 billion last year, is driven by changes in the stock of housing. Since no employment is involved, productivity is undefined (one reason that output per employee in the non-business sector can grow or shrink over time). After several years of double-digit growth, the stock of housing growth is starting to moderate, reflecting the slowdown in the housing market. This will trim real GDP growth in the future, while having no impact on employment.

## Employment

Income growth has been driven by labour income, up 5.3% in 2006, boosted by the strong gains in employment. This strength was captured by both measures of labour input: the Labour Force Survey (LFS) and the hours worked used for labour inputs in the productivity estimates.

There are important conceptual differences between LFS employment and the hours worked used in the productivity estimates. The LFS treats multiple jobholders as just one employed person, while labour input captures them through hours worked. Productivity excludes important sectors of the economy such as the non-business sector.

If the slowdown in labour productivity in 2006 is a real and pervasive phenomenon, what broad economic factors could explain it? The most obvious place to look first is the cyclical state of the economy. The 16-year-long expansion of employment accelerated in 2006, with most of the growth in full-time positions. This sent the unemployment rate to its lowest level in the 30-year history of the current Labour Force Survey. Many industries struggled with labour shortages, notably in Alberta and B.C., but even the Atlantic provinces were affected by year-end as manufacturers there reported more shortages of skilled and unskilled labour than in central Canada.



## Labour shortages and quality

Tight labour markets and shortages can often lead to slower productivity growth. Employers increasingly search out and hire less productive workers. When the U.S. labour market tightened at the peak of the high-tech boom in 1999 and 2000, for example, productivity growth slowed over a full point.

Several measures show declining labour quality, especially in western Canada. Employment rose faster last year for the youngest and oldest segments of the population—the least productive. For the young, below-average productivity reflects less experience and training; for older workers, the issues are eroding skills, a new career and less attachment to the labour force.<sup>6</sup> While neither trend was new last year, their growth accelerated sharply.

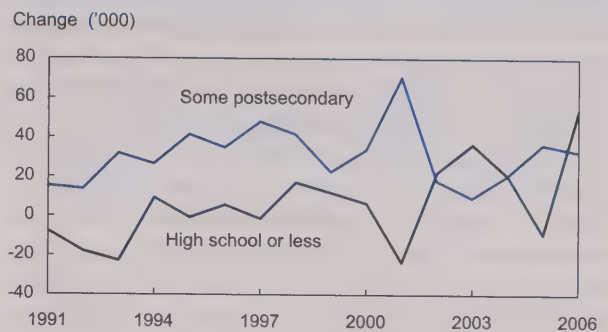
Nationwide, employment rose faster for people 55 and older (6.7%) and youths (1.5%) than for prime-aged workers (1.4%). As a result of increased demand, the unemployment rate for youths hit a record low of 9.7% by last December, and both the employment and labour force participation rates of people 55 and over hit record highs.

Shortages induced employers in Alberta and B.C. to turn most to the youngest and oldest. In Alberta, the increase was most pronounced for youths, where jobs rose 5.6%, boosting their employment rate from 64.1% to 65.3% between December 2005 and December 2006. B.C. was more reliant on older workers. While employment growth for prime-aged workers slowed to 0.9% during 2006, it rose 12.6% for older workers (including those 65 and over, up 1.7 points to 8.3%), twice the increase for 2005.

In Alberta, people with high school education or less accounted for over half of all employment growth in 2006. This was by far the most ever, and a distinct change from the 1990s when employers showed a marked preference for people with more than high school education (Chart J). B.C. saw a similar but less pronounced shift. Still, the Business Council of British Columbia felt that the shortages were severe enough to lower its forecast for GDP growth in 2007 (Finlayson 2007).

The decline in the education level of workers was symptomatic of the tightness of the labour market, not a deterioration in the quality of jobs available. In other words, the lower quality at the margin was driven

**Chart J** In Alberta, persons with no more than high school education led employment growth in 2006



Source: Statistics Canada, Labour Force Survey

by the supply of workers, not the demand of employers (who clearly would have preferred hiring people with better skills).

Not all measures of labour quality deteriorated last year. Employment of youths aged 15 to 24 slowed during the year except for Alberta. And the ranks of the self-employed fell during 2006, despite a brief rally at year-end. (The self-employed have lower productivity than employees).

However, employers reacted to the lower skill level of employees by stepping up training. Detailed employment estimates show employment in business schools and computer and management training institutes rose sharply last year, a marked departure from the previous five years.

Besides hiring less productive workers, employers may change their behaviour in ways that lower productivity. They could be more reluctant to lay off workers temporarily for fear that they would get jobs elsewhere and not return. Similarly, firms may hoard labour in anticipation of large projects coming onstream later. Reports say this is already occurring in the oil sands.<sup>7</sup>

Business investment points to higher productivity growth. Fuelled by record high profits, firms have stepped up investment outlays by a steady 10% in each of the last three years. The increased competitive pressure caused by the sharp rise in the exchange rate since

2003 would be a major incentive for firms to spend more. Similar pressures in the U.S. early this decade led to a sharp improvement in productivity.

Productivity rarely slumps for an extended period when investment is expanding (Chart K). This is encouraging for a rebound in productivity growth in the short run, holding out some prospect that the current slump will not be as prolonged as in 2002–2003. One factor that may explain the divergence of investment and productivity in 2006 was that so much of investment was driven by the energy sector, where the payoff in higher output will not materialize until later. Manufacturing, the sector with the largest incentive to invest in productivity-enhancing machinery and equipment, reined in such spending (presumably reflecting the intense pressure on profit margins) after a 10% gain in 2005 helped boost productivity that year.

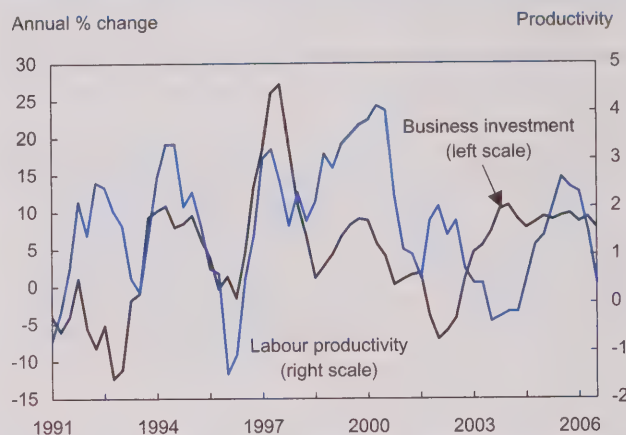
## Conclusion

Several economic and statistical reasons explain why productivity slowed in 2006. Nationally, growth shifted to industries where productivity declined, notably mining. Many industries, especially in western Canada, are struggling with labour shortages. Employers hired less-skilled labour and spent more time training employees. More generally, the shift of resources between industries, and increasingly regions, implies resources will not be productive during the transition. Finally, more industries were affected by one-time events last year, such as disruptions in the mining sector and a record warm winter that curtailed production.

The major question at the moment is not whether a slowdown in output relative to employment is occurring, but whether this slowdown is related to temporary factors (such as weather or other production disruptions, or a sudden shift of resources to new industries and regions) or signals the beginning of a longer-term slump in productivity caused by labour shortages, an aging labour force, or structural changes in the economy. Most of the variables studied in this paper point to transitory factors dominating in the short term. One exception was labour shortages in western Canada, partly caused by development of the oil sands.

One lesson to retain from 2006 is that large irregular movements are more likely to occur in an economy where natural resources are a growing part of output.

**Chart K Productivity rarely slumps for long when investment is growing**



Sources: Statistics Canada, Labour Productivity Measures; Income and Expenditure Accounts

Monthly output in mining has the most variability of any sector of the economy. Since this sector employs relatively few workers, contradictory short-term movements in output and employment could easily recur in the future. The best practice in such situations is not to place too much emphasis on short-term movements in productivity and instead look at them in the context of previous periods of growth when productivity temporarily sagged.

## Perspectives

### Notes

1 Even in the U.S., where productivity rose 2% in 2006, the slowdown earlier this decade led the Federal Reserve Board to observe that “the recent slowdown in labor productivity may be at least in part a temporary cyclical response ... rather than a meaningful downshift in the longer-run trend.” (BGFRS 2007, 18).

2 According to the National Energy Board (NEB), the initial productivity of gas wells in western Canada has fallen by almost two-thirds since 1996 (NEB 2006, 23). For oil, the NEB characterized western Canada “as a maturely explored basin, with diminishing finding rates and relatively high finding and development costs. Most of the larger pools have been discovered and smaller fields are increasingly difficult and costly to find.” (NEB 2005, 17).



3 "In 2006, potash production was idled at a number of Saskatchewan mines while producers waited for the Chinese government to settle on a pricing regime. As a result, large-scale shipments of Saskatchewan potash didn't begin until August." (Financial Post 2007).

4 Similar results were found for economy-wide Laspeyres versus Fisher indices of productivity at the 2-digit level, using detailed employment data from the Survey of Employment, Payrolls and Hours.

5 Also, these industries are ultimately benchmarked to data not based on labour input (such as tax data that capture all costs and revenues) and then deflated with a market price index. Based on the historical relationship between labour inputs and these final measures of output, the monthly estimates of growth are modified to minimize the possible revision. Interestingly, the last time that the contribution to growth from such industries was as large as last year was in 2003. At that time, their contribution to growth also peaked at over 40%, partly because of stepped-up demand for health services during the SARS crisis. Not surprisingly, this helped pull down output per worker that year. It is also noteworthy that this did not signal a new trend, as productivity growth quickly rebounded in 2004 and 2005.

6 An aging labour force can significantly lower productivity. One recent study estimated that the impact on Canada peaked in the 2001-to-2006 period, with annual losses in productivity of 0.2 percentage points (Tang and MacLeod 2006, 598).

7 For example, the Long Lake consortium said Phase 1 of the project was delayed by a 20% shortfall of labour productivity due to worker inexperience. It also said it was moving up work on Phase 2 for fear of losing employees as well as their position in the growing queues for supplies and equipment (Ebner 2006).

## ■ References

Board of Governors of the Federal Reserve System (BGFRS) 2007. *Monetary Policy Report to the Congress*. February 14. 21 p.

Ebner, Dave. 2006. "Nexen project in oil sands on budget and on time: But worker inexperience causes problems." *The Globe and Mail*, April 28, 2006. B5.

Financial Post. 2007. "Potash producers reach early pricing agreement with China." *National Post*, February 9, 2007, FP4.

Finlayson, Jock (ed.). 2007. *B.C. Outlook*. February. Vancouver. Business Council of British Columbia. 6 p.

Hoffman, Andy. 2007. "Cameco extends delay over flooded mine." *The Globe and Mail*, February 8, 2007, B4.

National Energy Board (NEB). 2006. *Short-term Canadian Natural Gas Deliverability 2006–2008*. October. Calgary. 46 p.

---. 2005. *Short-term Outlook for Canadian Crude Oil to 2006*. September. Calgary. 58 p.

Tang, Jianmin and Carolyn MacLeod. 2006. "Labour force ageing and productivity performance in Canada." *Canadian Journal of Economics*. Vol. 39, no. 2. May. p. 582–603.

### *Are you moving?*

Please forward your name, old address, new address, telephone number and client reference number to: **Statistics Canada, Finance Division, R.H. Coats Bldg., 6th floor, 100 Tunney's Pasture Driveway, Ottawa, Ontario K1A 0T6**; or call 1 800 267-6677 (Canada and United States), fax 1 877 287-4369 (Canada and United States) or e-mail [infostats@statcan.ca](mailto:infostats@statcan.ca).

Please allow four weeks notice to ensure uninterrupted delivery.

# Literacy and employability

Ross Finnie and Ronald Meng

Since the early 1990s, the technology-driven 'knowledge-based' economy has captured the attention and affected the lives of virtually all Canadians. This phenomenon has been of particular interest to researchers and policy makers, not to mention business owners, long-time workers, and students permanently entering the job market following graduation or, more troubling, after dropping out of high school. One concern is how those lacking the technical skills, experience and necessary education—beginning with the three Rs—may be left behind in dead-end jobs as their peers pursue more dependable and lucrative career paths.

While the economic effects of educational attainment have been examined in many studies,<sup>1</sup> the role of literacy and numeracy skills in determining the economic well-being of individuals also provides valuable insights. Previously, most investigations of the relationship between education and labour market outcomes ignored these basic skills, or simply assumed that they were captured in conventional education measures.

But more recent studies<sup>2</sup> have demonstrated that literacy and numeracy skills influence labour market performance and income in specific ways other than educational attainment, which is at best an imperfect proxy for these abilities.<sup>3</sup> In this paper, Statistics Canada's Survey of Literacy Skills Used in Daily

Activities (LSUDA) was used, including actual test scores measuring literacy and numeracy as opposed to commonly used self-reported competency levels.<sup>4</sup> The goal is to shed light on the relationship between these skills and various employment outcomes of high school dropouts (see *Data source and methodology*).

Identifying the effects of literacy and numeracy test scores on the employment outcomes of dropouts allows important questions relating to their economic future to be addressed. If early school leavers are confined to 'bad' jobs (low earnings, few or no benefits, reduced working hours) where language and numeracy skills have little or no effect on economic well-being (Doeringer and Piore 1971), then these skills should play only a minor role in explaining employment patterns or incomes. If, alternatively, literacy and numeracy skills have significant effects on these outcomes, the finding would have implications for public policy relating to high school curricula as well as adult education and re-training programs, not to mention researchers in this field.

This article investigates the effects of literacy and numeracy skills—or the lack thereof—on the employability and incomes of high school dropouts, in conjunction with traditional educational attainment measures. Descriptive information is presented on both dropouts and high school graduates,<sup>11</sup> followed by an examination of socio-economic background characteristics deemed to be associated with premature school departure (such as parental education). The dropout population is then analyzed in terms of broad employment characteristics based on a number of binary outcomes, such as whether a person who dropped out had a disability or whether they lived in a particular province. Finally, income functions are estimated for both dropouts and graduates. In all cases, the focus is on cognitive skills measured in terms of literacy and numeracy test scores.

---

Ross Finnie is with the School of Policy Studies at Queen's University and the Business and Labour Market Analysis Division at Statistics Canada. He can be reached at 613-533-6000, ext. 74219 or [ref@post.queensu.ca](mailto:ref@post.queensu.ca). Ronald Meng is with the Department of Economics at the University of Windsor. He can be reached at 519-253-4232, ext. 2371 or [rmeng@uwindsor.ca](mailto:rmeng@uwindsor.ca). The research paper *The Importance of Functional Literacy: Reading and Math Skills and Labour Market Outcomes of High School Drop-outs from which this article is adapted* is available on the Statistics Canada Web site at <http://www.statcan.ca/english/research/11F0019MIE/11F0019MIE2006275.pdf>.



## Data source and methodology

This article is based on the October 1989 **Survey of Literacy Skills Used in Daily Activities** (LSUDA). The survey had two components. The first asked about socio-demographic and employment characteristics, family background, and experience related to literacy and numeracy skills (reading, writing and arithmetic). The second asked respondents to perform a series of tasks to directly measure their literacy and numeracy skills (Statistics Canada 1991).

The LSUDA sample was selected from dwellings that had recently participated in the Labour Force Survey, which excludes persons living on Indian reserves, residents of the territories, full-time members of the Armed Forces, and people living in institutions (for example, nursing homes or prisons).

The full LSUDA file consists of a weighted sample of 9,455 respondents aged 16 to 69 in 1989. The analysis was restricted to Canadian-born men and women aged 21 to 54 who were not attending school at the time of the interview—2,318 men and 2,806 women of whom 851 and 872 respectively had left high school before graduating.<sup>5</sup>

The LSUDA measures of literacy and numeracy are based on item response theory.<sup>6</sup> The resulting measures are continuous variables ranging from 0 to 500. Individuals with a literacy score below 160 have difficulty dealing with any printed material, that is, they are fundamentally illiterate. Those with a numeracy score below 200 "have very limited numeracy abilities which enable them to, at most, locate and recognize numbers in isolation or in a short text" (Statistics Canada 1991, 19); in other words, they are effectively innumerate. Unfortunately, reading and numeracy are so closely related<sup>7</sup> that it is often difficult to separate the independent effects of each on employment, income, and other labour market indicators.<sup>8</sup>

To deal with this problem, some researchers have used only literacy in their analyses (Rivera-Batiz, 1990a, 1990b), others have used only numeracy (Rivera-Batiz, 1992), while still others have used both. However, taking the simple average of the two variables yields the best results and is easier to interpret in a context where it is difficult to identify their separate effects (Charette and Meng 1998; Pryor and Schaffer 1999; Green and Riddell 2001). In this article, the literacy and numeracy scores have been averaged to form one composite variable called **functional literacy**, a term initiated by Pryor and Schaffer.

The variables used in the analysis can be grouped into three categories. The first deals with employment and income—whether the respondent was employed at the time of the survey or at any time within the past 12 months, whether the employment was mostly full-time (30 hours or more per week), number of weeks worked in the last year, and the logarithm of income.

The second group of variables provides measures of socioeconomic background—mother's and father's years of education, whether the parents were immigrants, province of birth, Aboriginal status, first spoken language,<sup>9</sup> presence of a disability,<sup>10</sup> and any learning difficulty as a child.

The third group captures demographic characteristics and circumstances at the time of the survey—age, years of education, province of residence, city size, the first (or preferred) language used in adulthood, marital status, and presence of at least one child.

A probit model was used to calculate the probabilities of dropping out of school, depending on the binary outcomes of some of the explanatory variables above. Estimates based on a two-stage probit-OLS (ordinary least squares) procedure were also calculated to establish the positive or negative impacts of selected variables on employment outcomes.

## Graduates have higher functional literacy

As expected, the functional literacy scores of both men and women who dropped out of high school were significantly below those of graduates (Table 1).<sup>12</sup> In addition, dropouts reported a weaker attachment to the labour market and lower average incomes than their more educated counterparts.

The parents of high school graduates tended to be more educated than those whose offspring had dropped out, the differences varying from 2.4 to 2.9 additional years of schooling. The children of immigrants stayed in school longer than those of native-born Canadians. Higher-than-expected proportions of dropouts were born in the Atlantic provinces and Quebec (particularly women in this province), were

Aboriginal persons, spoke French in childhood, reported a disability, and had experienced learning difficulties in childhood.

In terms of demographic characteristics and circumstances, male dropouts were 4.5 years older, on average, than those who had graduated; female dropouts were almost five years older. Male and female dropouts tended to have five years less education, and a disproportionately high number lived in the Atlantic provinces. Disproportionately high numbers of female dropouts were also found in Quebec and Ontario. Dropouts were much more likely to be living in small cities and towns with a population under 30,000 and in rural areas. They were also more likely to speak French as adults, be married, and have children.

**Table 1 Characteristics of high school dropouts and graduates**

	Men		Women	
	Dropouts	Graduates <sup>1</sup>	Dropouts	Graduates <sup>1</sup>
Functional literacy scores <sup>2</sup>	238.8	271.3	236.4	275.3
Age <sup>2</sup>	38.1	33.6	38.3	33.5
Years of education <sup>2</sup>	9.3	14.4	9.3	14.4
Number of weeks worked in the past 12 months	41.5	47.1	26.4	38.8
Log of income <sup>2</sup>	10.08	10.27	9.20	9.73
Mother's years of education	7.9	10.5	8.1	10.5
Father's years of education	7.6	10.5	7.6	10.3
			%	
Employed, October 1989	82	92	50	77
Employed at any time in the past 12 months	91	97	63	87
Mostly full time <sup>3</sup>	88	91	44	66
Immigrant mother	9	14	11	15
Immigrant father	10	15	11	16
Born in				
Atlantic	16	10	15	12
Quebec	32	31	40	30
Ontario	30	35	25	30
Prairies	17	18	18	19
British Columbia	5	6	3	9
Aboriginal persons <sup>2</sup>	5	2	6	3
Language spoken as a child				
English	58	64	54	66
French	37	30	43	29
Other	4	6	3	6
With a disability <sup>2</sup>	12	6	12	7
Learning difficulties as a child	17	10	16	9
Province of residence <sup>2</sup>				
Atlantic	12	8	11	10
Quebec	29	29	31	27
Ontario	35	36	36	32
Prairies	15	18	16	19
British Columbia	9	9	6	12
City size <sup>2</sup>				
100,000 or more	40	63	49	62
30,000 to 99,999	11	11	9	11
Under 30,000 <sup>4</sup>	49	26	42	27
First language as an adult <sup>2</sup>				
English	68	73	67	73
French or other	32	27	33	27
Married <sup>2</sup>	73	66	76	69
With at least one child <sup>2</sup>	58	50	65	55

1 Includes those with postsecondary education.

2 Averages used in the income equations.

3 During periods of employment.

4 Includes rural areas.

Source: Survey of Literacy Skills Used in Daily Activities, 1989

force. For example, among men who worked mostly full time (when employed) in the 12 months preceding the survey, the test score difference between graduates and non-graduates was 29.4; the corresponding difference among women was 30.5. Yet as poor as the scores were for dropouts with jobs, they were significantly higher than the scores for those not in the labour force.<sup>13</sup> Among both graduates and non-graduates, literacy scores were consistently higher for women than for men in all employment categories.

### The odds of dropping out

A probit model was used to calculate the probabilities of dropping out of school depending on various explanatory variables (Table 3).<sup>14</sup> As a result of cohort effects, age is positively associated with the probability of dropping out of school, since all those leaving school did so when relatively young. For every additional year of age, the probability of leaving school early is almost 1 percentage point higher for men, while for women it is 0.77 of a point higher (the marginal effect<sup>15</sup>).

Interestingly, the province of birth effects for men are not as significant as the raw data suggest—except for those born in Quebec, who are significantly less likely to have dropped out than those born in the Atlantic provinces (the omitted category).<sup>16</sup> Among women, place of birth is much more important, with those born in Quebec, the Prairie provinces, and British Columbia having significantly lower probabilities of dropping out than those born in Atlantic Canada.

Having experienced learning difficulties as a child increased the probability of leaving school early

The average functional literacy scores of men and women were calculated according to various employment characteristics (Table 2). The differences between the scores are striking, not only between male and female graduates and non-graduates, but also between those in and out of the labour



**Table 2 Functional literacy scores and employment characteristics**

	Men			Women		
	Total	Dropouts	Graduates <sup>1</sup>	Total	Dropouts	Graduates <sup>1</sup>
Employed, October 1989	261.9	244.7	271.8	267.5	247.2	276.6
Employed at any time in the past 12 months	261.0	242.3	271.8	266.6	244.6	276.5
Mostly full time <sup>2</sup>	261.8	243.2	272.6	266.3	245.3	275.8
Not in the labour force	219.4	203.5	253.9	242.3	222.4	267.3

1 Includes those with postsecondary education.

2 During periods of employment.

Source: Survey of Literacy Skills Used in Daily Activities, 1989

by 19 percentage points for both men and women. Aboriginal persons also had a notably higher dropout rate (14 points for men and 13 points for women).

Parental education exerted a strong influence on a child's educational attainment. A 2.5-year increase in a mother's and father's education<sup>17</sup> reduced the odds of dropping out by about 15 points for both men and women.<sup>18</sup> While the evidence is not overwhelming, mothers appear to have a greater impact on a daughter's educational attainment than a son's, while fathers have a greater impact on a son's. A similar parent-child influence is seen in the significant impact an immigrant mother has on a daughter's chances of dropping out of school (a 12% probability reduction).<sup>19</sup>

### Factors affecting employment among dropouts

Among high school dropouts of both sexes, functional literacy had a significant, positive impact on being employed at the time of the survey, having been employed at any time in the previous 12 months, and having worked mostly full time when employed (Table 4).<sup>20</sup> In

contrast, the formal education variable (years of education) was not at all significant for male dropouts and significant only for female dropouts who worked mostly full time. For men, a one-standard-deviation increase in the functional literacy score increased the probability of the outcomes

**Table 3 Probit model determinants of dropping out of school**

	Men		Women	
	Coefficients	Marginal effects <sup>1</sup>	Coefficients	Marginal effects <sup>1</sup>
		%-point change		%-point change
Age	0.027	0.95***	0.024	0.77***
Born in				
Quebec	-0.224	-7.86**	-0.224	-7.27**
Ontario	-0.072	-2.54	-0.074	-2.38
Prairies	-0.031	-1.10	-0.151	-4.89*
British Columbia	-0.035	-1.22	-0.359	-11.63***
With a disability	0.075	2.62	0.096	3.11
Learning difficulties as a child	0.531	18.63***	0.591	19.12***
Mother's years of education	-0.080	-2.81***	-0.105	-3.41***
Father's years of education	-0.091	-3.20***	-0.088	-2.84***
Immigrant mother	-0.125	-4.39	-0.369	-11.96***
Immigrant father	-0.122	-4.30	-0.015	-0.48
Aboriginal persons	0.409	14.36**	0.406	13.14***
Language spoken as a child				
English	-0.135	-4.75	-0.165	-5.36*
French or other	0.125	-4.39	-0.023	-0.74
Constant	0.328	...	0.604	...

\* Significant at the 10% level.

\*\* Significant at the 5% level.

\*\*\* Significant at the 1% level.

1 See Note 15.

Source: Survey of Literacy Skills Used in Daily Activities, 1989

**Table 4 Determinants of selected employment characteristics of dropouts**

	Men			Women		
	Employed, October 1989	Employed at any time in the past 12 months	Mostly full time <sup>1</sup>	Employed, October 1989	Employed at any time in the past 12 months	Mostly full time <sup>1</sup>
Functional literacy scores	0.004***	0.006***	0.005***	0.006***	0.005***	0.004***
Age	0.247***	0.159**	0.125**	0.011	-0.007	0.000
Years of education	0.032	-0.027	0.007	0.016	0.038	0.083**
With a disability	0.153	-0.005	0.050	-0.472***	-0.713	-0.546***
Aboriginal persons	-0.262	-0.031	-0.104	-0.024	-0.017	-0.439**
Province of residence						
Atlantic	-0.354*	-0.103	-0.130	-0.686***	-0.312*	0.077
Quebec	-0.463*	-0.261	-0.316	-0.712***	-0.495**	-0.285
Prairies	0.138	-0.027	-0.241	-0.342**	-0.088	-0.024
British Columbia	0.299	-0.031	-0.215	-1.136***	-0.889***	-0.476**
City size						
100,000 or more	-0.235*	-0.494**	-0.202	0.248**	-0.062	0.022
30,000 to 99,999	-0.013	-0.189	-0.042	0.271	-0.055	-0.216
First language as an adult: English	-0.424*	-0.275	-0.246	0.068	0.117	0.048
Married	0.352**	0.651***	0.264*	0.350***	0.357***	0.160
With at least one child	-0.072	-0.316*	-0.005	-0.214*	-0.231*	-0.467***
Constant	-5.330***	-2.708*	-2.488*	-1.638	-0.740	-0.908
p	0.651***	0.681***	0.641***	0.026	-0.081	-0.333**

\* Significant at the 10% level.

\*\* Significant at the 5% level.

\*\*\* Significant at the 1% level.

1 During periods of employment.

Source: Survey of Literacy Skills Used in Daily Activities, 1989

between 1.4 and 4.3 percentage points. For women, the effects were all substantially greater, from 8.6 to 10.4 points (data not shown).

The parameter estimates for the other explanatory variables indicate further differences between men and women. The relationship between age and employment was non-linear for men, peaking at 37.8 years for those working at the time of the survey, 38.3 years for those working mostly full time in the 12 months preceding the survey, and 44.8 years for those who had been employed at any time in that period (data not shown). In the case of women, however, no clear age-employment relationship was seen.

Having a disability did not directly influence the employability of men who had dropped out of high school, but it had a significant, adverse effect on women in terms of current or full-time employment.

In general, the employment patterns of Aboriginal persons were not significantly different from their non-Aboriginal counterparts once the other variables in the models were taken into account.<sup>21</sup> However, a strong negative association between Aboriginal women and full-time work was evident. The province of residence was in many cases significant for women, but rarely so for men. While marriage had a positive impact on both sexes, the presence of children had a significant, negative impact on full-time employment for women.

As expected, literacy significantly increased the number of weeks worked for both sexes. Years of education also had a positive effect, but this finding was significant for men only (Table 5).<sup>22</sup>

The other independent variables generally behaved as noted earlier. Age positively affected the number of weeks worked by men but not women, while having



**Table 5 Determinants of weeks worked by dropouts**

	Men	Women
Functional literacy scores	0.055***	0.091***
Age	2.290***	0.277
Years of education	0.877**	0.920
With a disability	0.053	-10.393***
Aboriginal persons	-7.762***	-7.463**
Province of residence		
Atlantic	-8.709***	-15.686***
Quebec	-4.332	-8.365**
Prairies	1.870	-1.877
British Columbia	0.207	-18.498***
City size		
100,000 or more	-2.295*	2.607
30,000 to 99,999	0.460	1.462
First language as an adult:		
English	-4.448	1.746
Married	6.416***	5.706***
With at least one child	-0.768	-4.188**
$\lambda$ (inverse Mill's ratio adjustment)	7.444***	-4.186*
Constant	-27.826**	-0.546
F	11.4	11.5

\* Significant at the 10% level.

\*\* Significant at the 5% level.

\*\*\* Significant at the 1% level.

Source: Survey of Literacy Skills Used in Daily Activities, 1989

a disability strongly reduced them for women but not men. Aboriginal persons of both sexes reported significantly reduced weeks of employment, as did people living in the Atlantic provinces; however, living in British Columbia had a negative impact only for women. Finally, marriage had a strong positive association with weeks worked for both men and women, while the presence of children reduced the number of weeks worked for women only.

### Income of dropouts

Among men, increased literacy exerted a strong positive effect on incomes for both graduates and dropouts (Table 6).<sup>23</sup> Interestingly, the number of years of education was highly significant for male dropouts only, which may reflect a somewhat diminishing marginal economic return to education and a strong correlation between functional literacy and education for school leavers (reducing the statistical significance of

both measures).<sup>24</sup> For women, the effect of literacy was significant for graduates but not dropouts, while the return to years of education was highly significant for both. The remaining variables included in the models generally behave as expected, although the flatter age-income profiles seen for dropouts is of particular interest.

For graduates, in three of the four income regressions, the Aboriginal variable is positive and significant, albeit only at the 10% level. This finding suggests that while Aboriginal persons have significantly higher dropout rates than the rest of the population, their employment and income patterns are not much different once the observables controlled for in the models are taken into account.<sup>25</sup>

### Conclusion

Literacy and numeracy skills undoubtedly contribute to economic and social well-being. It is, however, unclear whether this holds for everybody, including those at the bottom end of the labour market, or only those with higher levels of education, who are more likely to be plugged into today's knowledge economy. The findings in this study suggest that among high school dropouts, who tend to have much lower functional literacy scores than their graduate counterparts, enhanced literacy and numeracy skills can significantly improve labour market outcomes—independently of the impact of formal education. Indeed, in some cases, the effects of functional literacy appear to be substantially greater than the number of years of education.

A study of literacy rates in 21 countries, including the United States, the United Kingdom and many European countries, found that Canadians in the top 25% of the literacy scale had overall scores well above many industrialized countries; however, the scores for the bottom 25% compared poorly with the lowest scores of other countries. Moreover, Canadians ranked 15<sup>th</sup> in literacy inequality (Tuijnman 2001).<sup>26</sup> Nevertheless, this article illustrates that although the literacy scores of Canadian high school dropouts are low compared with more educated Canadians or persons living in a selection of other countries, the acquisition of higher skill levels can have significant effects on their labour market success.

A trend to overqualification has been noted in the case of many North American jobs in recent years (Pryor and Schaffer 1999, among others). University graduates are often found doing work that high school graduates could do, while the latter are starting to per-

**Table 6 Determinants of income**

	Men				Women			
	Dropouts		Graduates <sup>1</sup>		Dropouts		Graduates <sup>1</sup>	
Functional literacy scores	0.002***	0.002***	0.001***	0.001**	-0.001	0.000	0.002***	0.002***
Age	0.037*	0.058***	0.143***	0.144***	0.057*	0.039	0.121***	0.123***
Years of education	0.075***	0.058***	0.024*	0.012	0.129***	0.098***	0.106***	0.103***
With a disability	-0.094	-0.053	-0.097*	-0.060	0.130	-0.126	-0.033	-0.021
Aboriginal persons	-0.103	0.037	0.098	0.198*	-0.073	-0.129	0.199*	0.217*
Province of residence								
Atlantic	-0.050	-0.032	-0.200***	-0.175***	-0.139	-0.178	-0.174**	-0.168**
Quebec	0.079	0.021	0.002	-0.011	0.141	0.042	-0.131	-0.135
Prairies	-0.076	-0.101	-0.152***	-0.155***	0.064	0.064	-0.158***	0.158***
British Columbia	0.069	0.054	-0.127***	-0.142***	0.062	0.074	-0.142**	-0.148**
City size								
100,000 or more	0.083*	0.071	0.130***	0.123***	0.248***	0.284***	0.192***	0.189***
30,000 to 99,999	0.112	0.082	0.044	0.047	0.023	0.065	-0.016	-0.017
First language as an adult:								
English	0.077	0.050	0.117*	0.094	0.067	0.055	0.040	0.027
Married	0.048	0.074	0.333***	0.331***	-0.338***	-0.285***	0.007	0.008
With at least one child	0.156***	0.134***	-0.073**	-0.070**	-0.158*	-0.184**	-0.256***	-0.256***
$\lambda_1$ (see note)	-0.111	...	0.011	...	-0.226	...	0.002	...
$\lambda_2$ (see note)	...	0.300***	...	-0.215***	...	-0.368***	...	-0.067
Constant	7.571***	6.928***	6.447***	6.681***	7.456***	8.161***	5.276***	5.347***
F	13.7	14.9	44.1	45.1	4.7	5.3	20.3	20.4

\* Significant at the 10% level.

\*\* Significant at the 5% level.

\*\*\* Significant at the 1% level.

1 Includes those with postsecondary education.

Note: Two different sets of variables were used for selecting persons who were employed at any time in the past 12 months. The first set consists of the explanatory variables listed in Table 4, as well as the years of education of both parents and whether they are immigrants ( $\lambda_1$ ). The second set of explanatory variables is listed in Table 3 ( $\lambda_2$ ).

Source: Survey of Literacy Skills Used in Daily Activities, 1989

form jobs previously held by dropouts. The results of this paper, however, suggest that those at the bottom end of the economic ladder are not completely trapped in a secondary labour market with few available options. Indeed, skills matter, and helping individuals increase their literacy and numeracy capabilities could be important for improving their labour market opportunities.

### Perspectives

#### Notes

1 See Card (1999) for a review of the literature.

2 See Rivera-Batiz (1990a, 1990b, 1992); Charette and Meng (1994, 1998); Murnane, Willett and Levy (1995); Pryor and Schaffer (1999); Green and Riddell (2001); and Finnie and Meng (2001, 2002b, 2005).

3 In virtually all the studies cited here, the inclusion of literacy or numeracy measures reduces the magnitude of the effects and statistical significance of the education variables in conventional human capital earnings models. That said, education is clearly related to literacy and numeracy skills in a causal fashion, but the full set of relationships has not been investigated to any degree (Finnie and Meng 2002a).

4 See Finnie and Meng (2005) on the comparison of test scores versus self-reported skill levels and their effects in employment and income models.

5 Immigrants were excluded from the analysis because the relationships between literacy, numeracy, education, and labour market outcomes are different for them than for native-born Canadians (Finnie and Meng 2002b). Older individuals (55 to 69) were excluded to avoid issues related to pre-retirement. Persons born in one of the territories but living in a province at the time of the survey were also omitted.



- 6 Item response theory (IRT) is an iterative statistical procedure used to summarize the pattern of answers on a test in a manner that accounts for task difficulty, tasks not attempted, guesses and random errors. IRT calculates an estimate of each task's difficulty and an estimate of an individual's ability to solve it using the same numerical scale, commonly ranging from 0 to 500 (Statistics Canada 1991).
- 7 The sample correlation between literacy and numeracy for both men and women in this study is 0.77.
- 8 Apart from people who are illiterate also tending to be innumerate, the numeracy questions in the LSUDA were embedded in a subset of reading tasks to simulate ways arithmetic is used on a daily basis. This means that a respondent had to first understand the written instructions in a question before attempting to perform the required arithmetic.
- 9 Very few adults (about 0.6% of the population) claim a first (or preferred) language other than English or French. For simplicity, those reporting speaking other languages as children were included with the French language group.
- 10 Although the presence or absence of a disability is treated as a background variable, no information is available on when a disability occurred—at birth, in childhood, or later in life.
- 11 High school graduates also include those who continued their schooling at a university, college or other postsecondary institution.
- 12 Difference-in-means tests for the functional literacy scores yield t-statistics of 17.8 for men and 23.2 for women, both of which are significant at the 1% level.
- 13 As Pryor and Schaffer (1999) conclude when looking at somewhat similar U.S. results: “[the functional literacy averages] hardly seem consistent with active participation in the heralded ‘information age’ ” (p. 23).
- 14 White's technique was used to control for heteroskedasticity.
- 15 Marginal effects indicate how much a given unit rise in a particular variable will increase or decrease the probability of an event occurring.
- 16 This indicates that province is correlated with other explanatory variables included in the models.
- 17 This is roughly equal to the differences in mean parental education levels seen in Table 1 for both graduates and non-graduates.
- 18 This was calculated by adding the marginal effects associated with both parents' years of education and multiplying the total by 2.5. For example, the calculation for men was as follows:  $[(-2.81) + (-3.20)] \times 2.5 = -15.0\%$ .
- 19 Several interaction variables were added to capture additional cohort and other cross effects: age x parent's education, mother's years of education x father's years of education, and age squared. None of the estimated coefficients were statistically significant.
- 20 To control for the joint circumstances of dropping out of school and having been employed, a two-stage procedure was carried out, which first involved estimating a bivariate probit that jointly determined the probability of dropping out of school (i.e.,  $DROP = 1$ ) with each of the binary variables examined. The determinants of dropping out are the variables listed in Table 3, while the determinants of each of the other outcomes are shown in Table 4. The resulting sample selection term was then included in the non-linear OLS dropout models. This approach is similar to that developed by Abowd and Farber (1982). Table 4 indicates that for men the estimates for the adjustment term ( $\rho$ ) are highly significant, while for women the variable is significant in just one of the three equations (Greene 1990, 692).
- 21 Aboriginal persons tend to have lower levels of education and functional literacy. And those living on Indian reserves or in the territories were not included in this study.
- 22 Evaluated at the sample means, the elasticity of weeks worked with respect to literacy scores and years of education is 0.31 and 0.19 respectively for men, and 0.81 and 0.31 for women. These elasticities are quite high for women, and functional literacy has a greater impact on their labour supply than men's. Rivera-Batiz (1992) reports similar results in his study on the effects of quantitative literacy (numeracy) on the labour supply of men and women.
- 23 Total income includes earnings (income from employment), pension income, transfer payments, investment income, and other income. Although it may have been preferable to use earnings or wage rates in these calculations, the LSUDA database does not contain this information. Moreover, since earnings constitute the greatest part of income, particularly among working-age individuals, and similar analytical results are obtained using earnings or income, the latter was deemed to produce good results for the purposes of this study.
- 24 Adding a 'squared years of education' term generally drove both the linear and quadratic terms to non-significance, so the simpler linear measure was retained. Larger sample sizes might allow these effects to be better delineated.

25 It should be remembered that data were not collected for persons living on Indian reserves or in the territories.

26 Inequality was measured in terms of the variance in the distribution of literacy scores.

## ■ References

Abowd, John M. and Henry S. Farber. 1982. "Job queues and the union status of workers." *Industrial and Labor Relations Review*. Vol. 35, no. 3. April. p. 354–367.

Card, David. 1999. "The causal effect of education on earnings." In *Handbook of Labor Economics*. Vol. 3A. Orley Ashenfelter and David Card (eds.). Elsevier Science, North-Holland. p. 1801–1863.

Charette, Michael F. and Ronald Meng. 1994. "Explaining language proficiency: Objective versus self-assessed measures of literacy." *Economics Letters*. Vol. 44, no. 3. p. 313–321.

---. 1998. "The determinants of literacy and numeracy, and the effect of literacy and numeracy on labour market outcomes." *Canadian Journal of Economics*. Vol. 31, no. 3. August. p. 495–517.

Doeringer, Peter B. and Michael J. Piore. 1971. *Internal Labor Markets and Manpower Analysis*. Lexington, Mass. D.C. Heath & Co. 214 p.

Finnie, Ross and Ronald Meng. 2001. "Cognitive skills and the youth labour market." *Applied Economics Letters*. Vol. 8, no. 10. October. p. 675–679.

---. 2002a. *A Recursive Income Model for Canadians: The Direct and Indirect Effects of Family Background*. Working paper no. 28. Kingston, Ont. Queen's University, School of Policy Studies. 28 p.

---. 2002b. "Minorities, cognitive skills and incomes of Canadians." *Canadian Public Policy*. Vol. 28, no. 2. June. p. 257–273.

---. 2005. "Literacy and labour market outcomes: Self-assessment versus test score measures." *Applied Economics*. Vol. 37, no. 17. September. p. 1935–1951.

Green, David A. and W. Craig Riddell. 2001. *Literacy, Numeracy and Labour Market Outcomes in Canada*. Ottawa. Statistics Canada Catalogue no. 89-552-MIE, no. 8. 44 p. <http://www.statcan.ca/english/research/89-552-MIE/89-552-MIE2001008.pdf> (accessed February 22, 2007).

Greene, William H. 1990. *Econometric Analysis*. New York. Macmillan. 783 p.

Murnane, Richard, John B. Willett and Frank Levy. 1995. "The growing importance of cognitive skills in wage determination." *Review of Economics and Statistics*. Vol. 77, no. 2. May. p. 251–266.

Pryor, Frederic L. and David L. Schaffer. 1999. *Who's Not Working and Why: Employment, Cognitive Skills, Wages, and the Changing U.S. Labor Market*. New York. Cambridge University Press. 314 p.

Rivera-Batiz, Francisco L. 1990a. "English language proficiency and the economic progress of immigrants." *Economic Letters*. Vol. 34, no. 3. November. p. 295–300.

---. 1990b. "Literacy skills and the wages of young black and white males in the U.S." *Economics Letters*. Vol. 32, no. 4. April. p. 377–382.

---. 1992. "Quantitative literacy and the likelihood of employment among young adults in the United States." *Journal of Human Resources*. Vol. 27, no. 2. Spring p. 313–328.

Statistics Canada. 1991. *Adult Literacy in Canada: Results of a National Study*. Ottawa. Statistics Canada Catalogue no. 89-525-XPE. 101 p.

Tuijnman, Albert. 2001. *Benchmarking Adult Literacy in North America: An International Comparative Study*. Ottawa. Statistics Canada Catalogue no. 89-572-XIE. 57 p. <http://www.statcan.ca/english/freepub/89-572-XIE/89-572-XIE1998001.pdf> (accessed February 22, 2007).



# What's new?

## *Recent reports and studies*

### ■ FROM STATISTICS CANADA

#### ■ *Income of Canadians*

The median after-tax income for Canadian families with two or more people rose 1.6% in 2005 to \$56,000, up 1.6% from 2004, after adjusting for inflation. This increase came on the heels of a 1.3% gain in 2004.

Though most family types shared in the increase in after-tax income, this was not the case for senior families and unattached individuals. Among senior families (those in which the main income earner was aged 65 or over) median after-tax income remained virtually unchanged at \$40,400 in 2005. However, this represented a 15% increase in real terms relative to 1996—mostly the result of a five-year upward trend that started in 1997.

Median after-tax income of unattached individuals remained stable at \$21,400 in 2005. About 14% of the population lived as unattached individuals in 2005, up from 11% two decades earlier.

Seniors living on their own had a median after-tax income of \$19,600 in 2005, virtually unchanged from 2004.

Canadian families earned the lion's share of their total income from market income, which comprises employment earnings, investment income and private retirement income.

For more information, see the May 3, 2007 issue of *The Daily* on the Statistics Canada's Web site ([www.statcan.ca](http://www.statcan.ca)).

#### ■ *Immigrants to Canada*

Most new immigrants are pleased to be living here and have positive views of Canada's social and political environment. However, after four years in the country,

their biggest difficulties still are finding an adequate job and dealing with the language barrier.

Four years after arriving in Canada, the majority of new immigrants (84%) were positive about their decision to come here.

When asked about the single-most important reason for settling permanently in Canada, the most prevalent responses were the quality of life here (32%), the desire to be close to family and friends (20%), future prospects for their family in Canada (18%) and the peaceful nature of the country (9%).

These new immigrants were also asked what had been their biggest difficulties since arrival. The most mentioned was finding an adequate job (46%), followed by learning English or French (26%).

The employment rate of immigrants increased with their ability to speak English. Moreover, the ability to speak English is linked with the kind of job that new immigrants find, as those speaking English well or very well were more likely to have an 'appropriate' job than those speaking it less well. However, the relationship between the ability to speak French and the chances of having an appropriate job was not as clear.

For more information, see the April 30, 2007 issue of *The Daily* on the Statistics Canada's Web site ([www.statcan.ca](http://www.statcan.ca)).

#### ■ *Labour productivity*

Productivity in Canadian businesses increased 0.3% between October and December, after a weak performance over the two preceding quarters. This reflected a slight slowdown in growth in gross domestic product (GDP) and a more noticeable slowdown in the growth in hours worked. Productivity improves when the GDP increases more than hours worked.

With the depreciation in the Canadian dollar, unit labour costs expressed in US dollars were down in the fourth quarter for the first time in six quarters. This

allowed Canadian businesses to recover some of the competitiveness they had lost in relation to their US counterparts starting in the third quarter of 2005.

Annual productivity growth reached 1.2% for 2006 as a whole, lower than the 2.1% recorded in 2005. This moderate gain in productivity can be attributed largely to the slowdown in productivity growth in the goods sector, while the services sector (mainly wholesale and retail trade) made a more positive contribution.

In particular, shortages of skilled labour in the West contributed to the productivity slowdown as did developments associated with activity in Alberta's tar sands—the latter resulting in strong growth in the volume of hours worked without yet generating commensurate increases in production.

For more information, see the March 12, 2007 issue of *The Daily* on the Statistics Canada's Web site ([www.statcan.ca](http://www.statcan.ca)).

### ■ *Low income and university attendance*

The gap in university attendance between youth from higher- and lower-income families is largely related to differences in academic performance at age 15 and parental influences, and to a lesser degree financial constraints.

In 2003, under one-third (31%) of 19-year-old youth from families in the bottom 25% of the income distribution had attended university. In contrast, one-half (50%) of those from families at the top of the income distribution had attended university.

Financial constraints were only weakly a direct barrier to attending university. In fact, the gap is almost entirely associated with differences in academic performance and parental influences. About 84% of the gap was related to differences in the characteristics of youth from different economic backgrounds, that is, their academic performance, parents' level of education, parental expectations, high school attended, and so on.

In contrast, just 12% of the gap in university attendance was related to the higher incidence of being financially constrained among lower-income youth.

Weaker academic performance among lower-income youth accounted for just over one-third (34%) of the gap. Specifically, young people from more dis-

advantaged backgrounds had a poorer performance on a standardized reading test and reported lower overall school marks at age 15.

For more information, see the February 8, 2007 issue of *The Daily* on the Statistics Canada's Web site ([www.statcan.ca](http://www.statcan.ca)).

## ■ FROM OTHER ORGANIZATIONS

### ■ *International patterns of union membership*

This paper examines changes in unionization over the last decade or so using individual level microdata from many countries, especially the United Kingdom, the United States and Canada. The paper documents an empirical regularity not hitherto identified: the probability of being unionized follows an inverted U-shaped pattern by age, maximizing in the mid- to late 40s, across countries with diverse industrial relations systems. This arises in part because of cohort effects, but even when cohort effects are removed, a U-shape remains. See "International patterns of union membership" by David G. Blanchflower, *British Journal of Industrial Relations*, March 2007, Vol. 45, no. 1, p. 1–28.

### ■ *Globalization, human resource practices and innovation*

This study examines the triangular relationship that connects the degree to which a workplace is internationally engaged, the extent to which it innovates, and the human resource practices it adopts. By pooling various years of data from the Canadian Workplace and Employee Survey, the study found that certain practices, such as variable pay and autonomy training, are more likely to be used in international workplaces. For an international workplace, the use of variable pay contributes very little to workplace innovation, while autonomy training has a positive relationship with innovation. See "Globalization, human resource practices and innovation: Recent evidence from the Canadian Workplace and Employee Survey" by Scott Walsworth and Anil Verma, *Industrial Relations*, April 2007, Vol. 46, no. 2, p. 222–240.



## ■ *Work environments in fixed-term and permanent jobs in Finland and Canada*

This comparative study of Finland and Canada examines work environments in fixed-term and permanent jobs. Results are similar for all workers regardless of whether they are on fixed-term or permanent contracts. All workers feel their working hours are inflexible, but feel they have control over the tasks they perform and they have low risk of accident. The only difference is in the feelings of job insecurity:

fixed-term workers, in both Finland and Canada, feel more insecure than those in permanent jobs. The findings indicate that the global trends in flexibility and insecurity permeate all workers. See "Achieving flexibility through insecurity: A comparison of work environments in fixed-term and permanent jobs in Finland and Canada" by Antti Saloniemi and Isik Urla Zeytinoglu, *European Journal of Industrial Relations*, March 2007, Vol. 13, no. 1, p. 128-129.

Subscribe to *Perspectives on Labour and Income* today!

**Save  
by extending your  
subscription!**

**Save 20%**  
by subscribing for 2 years!  
Only \$100.80 (plus taxes)

**Save 30%**  
by subscribing for 3 years!  
Only \$132.30  
(plus taxes)



### MAIL

Statistics Canada  
Finance Division  
100 Tunney's Pasture  
Driveway, 6th floor  
Ottawa, Ontario  
Canada K1A 0T6



### PHONE

1 800 267-6677

Quote PF027090



### FAX

1 877 287-4369  
(613) 951-0581



### E-MAIL

Infostats@statcan.ca

Name \_\_\_\_\_

Company \_\_\_\_\_

Department \_\_\_\_\_

Address \_\_\_\_\_

( )

City \_\_\_\_\_

( )

Province \_\_\_\_\_

Postal Code \_\_\_\_\_

Phone \_\_\_\_\_

Fax \_\_\_\_\_

E-Mail address \_\_\_\_\_

Catalogue No.	Title
75-001-XPE	Perspectives on Labour and Income

No shipping charges for delivery in Canada. Outside Canada, please add shipping charges as indicated. Canadian clients add either 6% GST and applicable PST or HST (GST Registration No. R121491807). Clients outside Canada pay in Canadian dollars drawn on a Canadian bank or pay in equivalent US dollars, converted at the prevailing daily exchange rate, drawn on a US bank. Federal government departments must include with all orders their IS Organization Code \_\_\_\_\_ and IS Reference Code \_\_\_\_\_

Your personal information is protected by the *Privacy Act*. Statistics Canada will use your information only to complete this sales transaction, deliver your product(s), announce product updates and administer your account. From time to time, we may also offer you other Statistics Canada products and services or ask you to participate in our market research.

If you do not wish to be contacted again for promotional purposes ☐ and/or market research ☐, check as appropriate.

### METHOD OF PAYMENT

Charge to my: ☐ MasterCard ☐ VISA ☐ American Express

Card Number \_\_\_\_\_

Expiry Date \_\_\_\_\_

Authorized Signature \_\_\_\_\_

Cardholder (Please print) \_\_\_\_\_

☐ Payment Enclosed \$ \_\_\_\_\_

Authorized Signature \_\_\_\_\_

Subscription	Price (CDN \$)	Quantity	Total CDN \$
1 year	63.00		
2 years	100.80		
3 years	132.30		
Subtotal			
Applicable GST (6%)			
Applicable PST			
Applicable HST (N.S., N.B., N.L.)			
Shipping charges U.S. CDN \$24, other countries CDN \$40			
Grand Total			



Statistics Canada  
Statistique Canada

Canada

# In the works

*Some of the topics in upcoming issues*

## ■ Labour inputs to non-profit institutions

In an era when non-profit institutions are finding it more difficult to finance their operations, it is important that they be well informed about the mix of labour they use, whether employees, contractors or volunteers. The Labour Inputs to Non-profit Organizations Project aims to develop a comprehensive estimation procedure.

## ■ Investment allocation

In 2005, the Survey of Financial Security for the first time collected details on types of investments held in registered and non-registered accounts. The article looks at asset allocation in and outside RRSPs by demographic, financial and employment characteristics.

## ■ Public pensions and labour market attachment

Since public pensions are a significant retirement resource for most Canadians, their eligibility requirements and benefit provisions affect the retirement decision.

## ■ Shift workers

With the continuing expansion of the 24/7 economy, about one-third of the workforce no longer have a regular daytime schedule. Some shift workers with families may have a particularly hard time juggling work, housework, child care, leisure and sleep.

## ■ Workplace stress

Work-related stress is a major challenge to the mental and physical health of workers and the well-being of their organizations. The causes and consequences of work stress as well as factors that protect against it are analyzed.

## ■ Work absences

Previous studies of work absences have not distinguished between full- and part-week absences. The two appear to have diverging trends. Also, they seem to show some seasonal patterns.

## ■ Telework

After phenomenal growth in the 1990s, the incidence of telework seems to have stabilized. And this despite the increased ease and decreased costs of working from home. The factors behind the change are probed.

## ■ Immigrants in the hinterlands

The concentration of immigrants in the major urban centres is well known. This study looks at the not insignificant number of immigrants living outside the major centres.

### PERSPECTIVES ON LABOUR AND INCOME

The quarterly for labour market and income information



# Varia

*In this issue: Work absence rates and Gambling*

## PREVIOUS UPDATES

Retirement – Summer 2006  
Unionization – Autumn 2006  
Minimum wage – Winter 2006

## ECONOMIC AND SOCIAL INDICATORS

Provincial wealth inequality – Spring 2005  
Tourism – Summer 2005  
Residential construction – Autumn 2005  
Education – Winter 2005  
Personal debt – Spring 2007

## CONTACTS

### Administrative data

*Small area and administrative data*  
Customer Services  
613-951-9720

### Business surveys

*Annual Survey of Manufactures and Logging*  
Client Services  
613-951-9497

*Annual surveys of service industries*  
Patti Dow  
613-951-4612

*Business Conditions Survey of Manufacturing Industries*  
Claude Robillard  
613-951-3507

### Census

*Labour force characteristics*  
Sandra Swain  
613-951-6908

*Income statistics*  
John Gartley  
613-951-6906

### Employment and income surveys

*Labour Force Survey*  
Marc Lévesque  
613-951-4090

*Survey of Employment, Payrolls and Hours*  
Sylvie Picard  
613-951-4003

*Employment Insurance Statistics Program*  
Robert Keay  
613-951-4008

*Major wage settlements*  
Workplace Information Directorate  
(Human Resources and Social Development Canada)  
819-997-3117 or 1 800 567-6866

*Labour income*  
Anna MacDonald  
613-951-3784

*Survey of Labour and Income Dynamics*  
*Survey of Financial Security*  
*Survey of Household Spending*  
Client Services  
613-951-7355 or 1 888 297-7355

### General Social Survey

*Education, work and retirement*  
*Aging and social support*  
*Time use*  
Client Services  
613-951-5979

### Pension surveys

*Pension Plans in Canada Survey*  
Michel Palardy  
613-951-7559

*Quarterly Survey of Trusteed Pension Funds*  
Gregory Sannes  
613-951-4034

### Special surveys

*Survey of Work Arrangements*  
Ernest B. Akyeampong  
613-951-4624

*Adult Education and Training Survey*  
Client Services  
613-951-7608 or 1 800 307-3382

*National Graduates Survey*  
Client Services  
613-951-7608

# Work absence rates

There are many kinds of absence. Some, such as annual vacation, are generally considered beneficial for both the organization and the employee. Since they are usually scheduled, their effect on the organization can be fairly easily absorbed; the same can be said of statutory holidays. Other absences, such as those caused by illness and family-related demands, are generally unavoidable, as are those due to inclement weather.

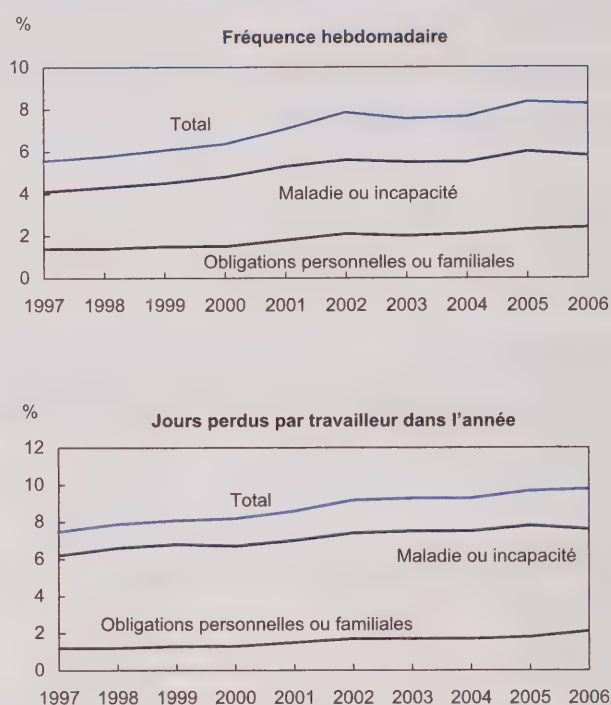
Absenteeism, a term used to refer to absences that are avoidable, habitual and unscheduled, is a source of irritation to employers and co-workers. Such absences are disruptive to proper work scheduling and output, and costly to an organization and the economy as a whole. Although absenteeism is widely acknowledged to be a problem, it is not easy to quantify. The dividing line between avoidable and unavoidable is difficult to draw, and absenteeism generally masquerades as legitimate absence. The Labour Force Survey (LFS) can provide measures of time lost because of personal reasons—that is, illness or disability, and personal or family responsibilities. However, within these categories, it is impossible to determine if an absence is avoidable or unscheduled. LFS data on absences for personal reasons can, however, be analyzed to identify patterns or trends that indicate the effect of absenteeism (see *Data source and definitions*).

## Recent trends—1997 to 2006

Since 1997,<sup>1</sup> both the incidence and the number of days lost for personal reasons (illness or disability, and personal or family responsibilities) have shown a rising trend (Chart). Several factors have contributed: notably, an aging workforce; the growing share of women in the workforce, especially those with young children; high worker stress;<sup>2</sup> and more generous sick- and family-related leave benefits.

In an average week in 1997, excluding women on maternity leave, about 5.5% (484,000) of all full-time employees holding one job were absent from work for all or part of the week for personal reasons. By 2006, the figure had risen to 8.2% (896,000) (Table 1). Total work time missed also rose steadily, from 3.0%

Chart: Work absence rates, 1997 to 2006



Source: Statistics Canada, Labour Force Survey

of the scheduled week in 1997 to 3.9% in 2006. Extrapolated over the full year, work time lost for personal reasons increased from the equivalent of 7.4 days per worker in 1997 to 9.7 days in 2006.

## Variations in absence rates in 2006

Absence for personal reasons differs among various worker groups. Several factors are responsible, principally working conditions (physical environment, degree of job stress, employer-employee relations, collective agreement provisions, work schedules);



adequacy and affordability of community facilities such as child-care centres and public transportation; family circumstances, especially the presence of pre-school children and other dependent family members; and physical health of the worker, a factor closely related to age. Measuring the effects of these and other contributing factors is not easy since many are not captured by the LFS. However, some insight is gained by examining personal absences in 2006 by selected demographic characteristics, occupation and industry, and other attributes such as union and job status.

### Demographic differences

In 2006, excluding women on maternity leave, an estimated 8.2% (896,000) of full-time employees missed some work each week for personal reasons: 5.8% for own illness or disability, and 2.4% for personal or family responsibilities (Table 2). As a result, full-time employees lost about 3.9% of their work time each week.

On average, each full-time employee lost 9.7 days in 2006 for personal reasons (7.6 for own illness or disability plus 2.1 for personal or family demands). This amounted to an estimated 102 million workdays for all full-time employees. Men lost fewer days than women—8.7 (6.7 for illness or disability plus 1.9 for personal or family demands) versus 11.2 (8.8 plus 2.4).

The presence of preschool-aged children exerts a strong influence on work absences for personal or family responsibilities. In 2006, full-time employees in families with at least one preschool-aged child lost an average of 5.7 days, compared with only 1.5 for those in families without children.

The growing prevalence of family-leave entitlements in the workplace, the extension of Employment Insurance parental benefits,<sup>3</sup> and the greater involvement of fathers in child care appear to have eliminated the difference between the sexes with respect to personal and family-related absences. In 1997, women with preschool-aged children and working full time lost 4.1 days for such reasons, compared with 1.8 days for men in similar circumstances. By 2006, the gap had narrowed considerably (6.2 days for women versus 5.4 for men).

Workdays missed because of illness or disability tended to rise with age, from an average of 6.2 days for youth (15 to 19) to 10.8 for full-time employees aged 55 to 64.

### Industry and sector

Work absence rates differ by sector (public or private) and industry, with almost all of the difference arising from illness and disability absences (Table 3). Contributing factors include the nature and demands of the job, the male–female composition of the workforce, and the union density—the last being a strong determinant of the presence or lack of paid sick or family leave.

Full-time employees in the public sector (more likely unionized or female) lost more work time in 2006 for personal reasons (about 13 days on average) than their private-sector counterparts (8.8 days).

At the major (2-digit) industry level, the most workdays were missed by employees in health care and social assistance (14.4 days), utilities (12.4), and public administration (12.0).

The lowest averages were recorded by full-time workers in professional, scientific and technical services (5.6 days); and finance, insurance, real estate and leasing (7.5). Those in accommodation and food services (8.2), primary industry (8.3), and trade (8.5) also missed fewer workdays.

### Occupation

Contributing factors by occupational absence rates are similar to those for industry (Table 4). Again, as by major industry, differences arise mainly from time lost due to illness or disability.

The most days lost in 2006 were recorded for full-time employees in health occupations (14.6), and occupations unique to production (12.0). Workers in management (5.9), and in natural and applied sciences (6.8) recorded the fewest days lost.

### Union coverage, job status, workplace size and job tenure

Full-time workers who belonged to unions or were covered by collective agreements missed almost twice as many workdays on average in 2006 for personal reasons than their non-unionized counterparts (13.6 versus 7.9) (Table 5).

Workers with permanent jobs (more likely to be unionized) lost more workdays (9.9) than those whose jobs were not permanent (8.0).

Days lost tended to rise with workplace size, increasing from a low of 8.2 in workplaces with fewer than 20 employees (firms more likely to have low union rates) to 12.0 in workplaces with 500 employees or more (firms likely to have high union rates).

Days lost tended to rise with job tenure, with almost all the differences arising from illness and disability. Employees with tenure of up to one year lost 7.4 days, while those with over 14 years lost 11.6 days (the latter group were also likely older).

### Province and CMA

Work absence levels differed by geographic area (Table 6), with most of the variation again arising from illness or disability.

Full-time employees in Quebec (11.5), New Brunswick (11.5) and Saskatchewan (11.0) lost the most work time in 2006. Those in Prince Edward Island (8.5), Ontario (8.8) and Alberta (9.0) lost the least.

Among the census metropolitan areas, Gatineau (14.5) and Thunder Bay (12.4) lost the most days per full-time worker. Montréal, Québec, Saguenay, Regina and Trois-Rivières followed at about 11 days each. Toronto (7.5) and Calgary (7.9) had the least.

### ■ Notes

1. 1997 marks the introduction of the revised Labour Force Survey questionnaire.
2. For more information on this subject, see Margot Shields, "Stress, health and the benefit of social support," *Health Reports* (Statistics Canada Catalogue 82-003-XIE) vol. 15, no. 1, January 2004. Also see Cara Williams, "Sources of workplace stress," *Perspectives on Labour and Income* (Statistics Canada Catalogue 75-001-XIE) vol. 4, no. 6, June 2003 online edition.
3. In December 2000, changes in Employment Insurance regulations extended the duration of parental leave benefits from 10 to 35 weeks. The 35 weeks can be taken by one (qualifying) parent, or they can be split between both (qualifying) parents.

*For further information, contact Ernest B. Akyeampong, Labour and Household Surveys Analysis Division. He can be reached at 613-951-4624 or [ernest.akeyampong@statcan.ca](mailto:ernest.akeyampong@statcan.ca).*



Table 1 Absence rates for full-time employees by sex, 1997 to 2006, excluding maternity leave

	Incidence <sup>1</sup>			Inactivity rate <sup>2</sup>			Days lost per worker in year <sup>3</sup>		
	Total	Illness or disability	Personal or family responsibilities	Total	Illness or disability	Personal or family responsibilities	Total	Illness or disability	Personal or family responsibilities
	%			%			days		
Both sexes									
1997	5.5	4.1	1.4	3.0	2.5	0.5	7.4	6.2	1.2
1998	5.7	4.3	1.4	3.1	2.6	0.5	7.8	6.6	1.2
1999	6.0	4.5	1.5	3.2	2.7	0.5	8.1	6.8	1.3
2000	6.3	4.8	1.5	3.2	2.7	0.5	8.0	6.7	1.3
2001	7.0	5.3	1.8	3.4	2.8	0.6	8.5	7.0	1.5
2002	7.8	5.6	2.1	3.6	3.0	0.7	9.1	7.4	1.7
2003	7.5	5.5	2.0	3.7	3.0	0.7	9.2	7.5	1.7
2004	7.6	5.5	2.1	3.7	3.0	0.7	9.2	7.5	1.7
2005	8.3	6.0	2.3	3.9	3.1	0.7	9.6	7.8	1.8
2006	8.2	5.8	2.4	3.9	3.0	0.9	9.7	7.6	2.1
Men									
1997	4.6	3.4	1.2	2.5	2.1	0.4	6.3	5.3	0.9
1998	4.9	3.7	1.2	2.7	2.3	0.4	6.9	5.8	1.0
1999	5.2	3.9	1.3	2.8	2.4	0.4	7.0	5.9	1.1
2000	5.5	4.1	1.4	2.8	2.4	0.4	7.0	5.9	1.1
2001	6.1	4.6	1.6	3.1	2.5	0.5	7.6	6.3	1.3
2002	6.7	4.8	1.9	3.2	2.6	0.6	8.0	6.5	1.6
2003	6.5	4.7	1.8	3.3	2.6	0.6	8.2	6.6	1.5
2004	6.6	4.6	2.0	3.2	2.6	0.7	8.0	6.4	1.6
2005	7.2	5.2	2.1	3.4	2.7	0.7	8.6	6.9	1.7
2006	7.2	5.1	2.1	3.5	2.7	0.8	8.7	6.7	1.9
Women									
1997	6.7	5.1	1.7	3.6	3.0	0.6	9.1	7.6	1.5
1998	6.7	5.1	1.6	3.7	3.1	0.6	9.2	7.8	1.5
1999	7.1	5.4	1.8	3.8	3.2	0.6	9.6	8.0	1.6
2000	7.5	5.7	1.8	3.8	3.2	0.6	9.4	7.9	1.5
2001	8.2	6.2	2.0	3.9	3.2	0.7	9.8	8.0	1.8
2002	9.2	6.7	2.4	4.3	3.5	0.8	10.7	8.7	1.9
2003	8.9	6.6	2.3	4.3	3.5	0.8	10.7	8.8	1.9
2004	8.9	6.6	2.3	4.3	3.6	0.7	10.8	9.0	1.9
2005	9.6	7.0	2.6	4.5	3.7	0.8	11.2	9.1	2.0
2006	9.5	6.8	2.7	4.5	3.5	1.0	11.2	8.8	2.4

1 Absent workers divided by total.

2 Hours absent divided by hours usually worked.

3 Inactivity rate multiplied by working days in year (250).

Source: Labour Force Survey

**Table 2 Absence rates for full-time employees by sex, age, education and presence of children, 2006, excluding maternity leave**

	Incidence <sup>1</sup>			Inactivity rate <sup>2</sup>			Days lost per worker in year <sup>3</sup>		
	Total	Illness or disability	Personal or family responsibilities	Total	Illness or disability	Personal or family responsibilities	Total	Illness or disability	Personal or family responsibilities
	%			%			days		
Age									
Both sexes	8.2	5.8	2.4	3.9	3.0	0.9	9.7	7.6	2.1
15 to 19	7.5	5.7	1.8	3.1	2.5	0.6	7.7	6.2	1.5
20 to 24	7.6	5.5	2.0	3.0	2.3	0.7	7.6	5.8	1.8
25 to 34	8.6	5.8	2.8	3.6	2.5	1.1	9.1	6.4	2.7
35 to 44	8.5	5.7	2.8	3.9	2.9	1.0	9.8	7.3	2.5
45 to 54	7.8	5.8	2.0	4.1	3.4	0.7	10.2	8.5	1.6
55 to 64	8.5	6.7	1.8	5.0	4.3	0.7	12.4	10.8	1.7
65 and over	5.7	4.3	F	3.6	3.0	F	9.0	7.6	F
Men	7.2	5.1	2.1	3.5	2.7	0.8	8.7	6.7	1.9
15 to 19	7.3	5.4	1.9	3.1	2.5	0.6	7.7	6.3	1.4
20 to 24	7.1	5.3	1.8	2.9	2.3	0.6	7.3	5.7	1.6
25 to 34	7.5	5.0	2.5	3.2	2.2	1.0	8.0	5.5	2.5
35 to 44	7.2	4.8	2.4	3.4	2.5	0.9	8.4	6.2	2.2
45 to 54	6.6	4.8	1.8	3.5	2.9	0.6	8.7	7.3	1.4
55 to 64	7.8	6.1	1.7	4.8	4.2	0.6	11.9	10.4	1.5
65 and over	5.6	4.3	F	3.5	3.0	F	8.7	7.4	F
Women	9.5	6.8	2.7	4.5	3.5	1.0	11.2	8.8	2.4
15 to 19	7.8	6.1	1.7	3.1	2.4	0.7	7.7	6.0	1.7
20 to 24	8.2	5.8	2.3	3.2	2.3	0.9	8.0	5.9	2.1
25 to 34	10.2	6.9	3.2	4.2	3.1	1.2	10.6	7.6	2.9
35 to 44	10.1	6.9	3.2	4.6	3.5	1.1	11.6	8.8	2.9
45 to 54	9.1	6.9	2.2	4.8	4.0	0.8	12.0	10.1	1.9
55 to 64	9.5	7.4	2.1	5.3	4.5	0.8	13.2	11.3	1.9
65 and over	6.0	F	F	3.9	F	F	9.7	F	F
Educational attainment									
Both sexes	8.2	5.8	2.4	3.9	3.0	0.9	9.7	7.6	2.1
Less than grade 9	7.4	5.8	1.5	4.3	3.7	0.6	10.7	9.2	1.5
Some secondary	9.5	7.1	2.3	5.1	4.2	0.9	12.7	10.5	2.2
High school graduation	8.0	5.8	2.2	3.9	3.1	0.8	9.7	7.7	2.0
Some postsecondary	8.8	6.4	2.4	4.1	3.3	0.8	10.2	8.2	2.0
Postsecondary certificate or diploma	8.5	6.1	2.4	4.1	3.3	0.9	10.3	8.2	2.1
University degree	7.3	4.8	2.5	3.0	2.1	0.9	7.6	5.3	2.3
Presence of children									
Both sexes	8.2	5.8	2.4	3.9	3.0	0.9	9.7	7.6	2.1
With children	8.7	5.6	3.2	4.1	2.9	1.2	10.3	7.3	3.0
Preschoolers -									
under 5 years	10.7	5.7	5.0	4.9	2.7	2.3	12.3	6.6	5.7
5 to 12 years	8.5	5.5	2.9	3.7	2.8	0.9	9.3	7.1	2.2
13 years and over	7.6	5.5	2.1	3.9	3.2	0.7	9.6	7.9	1.7
Without children	7.8	6.0	1.8	3.8	3.1	0.6	9.4	7.8	1.5

1 Absent workers divided by total.

2 Hours absent divided by hours usually worked.

3 Inactivity rate multiplied by working days in year (250).

Source: Labour Force Survey



**Table 3 Absence rates for full-time employees by industry and sector, 2006, excluding maternity leave**

	Incidence <sup>1</sup>			Inactivity rate <sup>2</sup>			Days lost per worker in year <sup>3</sup>		
	Total	Illness or disability	Personal or family responsibilities	Total	Illness or disability	Personal or family responsibilities	Total	Illness or disability	Personal or family responsibilities
		%			%			days	
<b>All industries</b>	<b>8.2</b>	<b>5.8</b>	<b>2.4</b>	<b>3.9</b>	<b>3.0</b>	<b>0.9</b>	<b>9.7</b>	<b>7.6</b>	<b>2.1</b>
Public employees	10.3	7.7	2.6	5.2	4.1	1.1	13.0	10.3	2.7
Private employees	7.6	5.3	2.3	3.5	2.7	0.8	8.8	6.9	2.0
<b>Goods-producing</b>	<b>7.8</b>	<b>5.5</b>	<b>2.3</b>	<b>3.8</b>	<b>3.1</b>	<b>0.8</b>	<b>9.6</b>	<b>7.7</b>	<b>1.9</b>
Primary	5.9	4.0	2.0	3.3	2.6	0.7	8.3	6.4	1.8
Agriculture	6.3	4.1	2.2	3.1	2.5	0.7	7.8	6.2	1.7
Other	5.8	3.9	1.9	3.4	2.6	0.8	8.4	6.5	1.9
Utilities	9.5	7.1	2.4	5.0	4.3	0.7	12.4	10.7	1.7
Construction	7.4	5.2	2.2	3.8	3.0	0.8	9.5	7.5	2.0
Manufacturing	8.3	5.9	2.4	3.9	3.1	0.8	9.7	7.8	1.9
Durable	8.3	5.7	2.6	3.8	3.0	0.9	9.6	7.4	2.1
Non-durable	8.1	6.1	2.0	4.0	3.3	0.7	10.0	8.4	1.6
<b>Service-producing</b>	<b>8.3</b>	<b>6.0</b>	<b>2.4</b>	<b>3.9</b>	<b>3.0</b>	<b>0.9</b>	<b>9.8</b>	<b>7.6</b>	<b>2.2</b>
Trade	7.3	5.1	2.2	3.4	2.6	0.8	8.5	6.5	2.0
Wholesale	7.0	4.4	2.7	3.0	2.1	0.9	7.4	5.1	2.2
Retail	7.4	5.4	2.0	3.6	2.8	0.7	9.0	7.1	1.9
Transportation and warehousing	7.9	5.8	2.1	4.6	3.8	0.8	11.6	9.5	2.1
Finance, insurance, real estate and leasing	7.3	4.9	2.4	3.0	2.3	0.8	7.5	5.6	1.9
Finance and insurance	7.6	5.0	2.5	3.1	2.3	0.8	7.8	5.8	2.0
Real estate and leasing	6.4	4.5	2.0	2.7	2.0	0.7	6.7	5.1	1.7
Professional, scientific and technical	6.6	4.4	2.3	2.2	1.6	0.6	5.6	4.0	1.6
Business, building and support services	9.9	7.4	2.6	4.6	3.6	0.9	11.5	9.1	2.4
Educational services	9.2	6.6	2.6	4.3	3.2	1.0	10.7	8.0	2.6
Health care and social assistance	10.5	8.1	2.5	5.7	4.7	1.1	14.4	11.7	2.7
Information, culture and recreation	7.3	5.2	2.1	3.5	2.7	0.8	8.7	6.8	2.0
Accommodation and food services	6.7	4.8	1.9	3.3	2.5	0.8	8.2	6.2	2.0
Other services	6.9	4.5	2.4	2.9	2.2	0.8	7.3	5.4	1.9
Public administration	10.9	7.8	3.1	4.8	3.6	1.2	12.0	9.0	3.0
Federal	13.7	9.5	4.1	5.7	4.1	1.6	14.1	10.2	3.9
Provincial	10.4	7.8	2.7	4.7	3.7	1.0	11.7	9.2	2.5
Local, other	8.0	5.6	2.4	3.9	2.9	0.9	9.7	7.3	2.3

1 Absent workers divided by total.

2 Hours absent divided by hours usually worked.

3 Inactivity rate multiplied by working days in year (250).

Source: Labour Force Survey

**Table 4 Absence rates for full-time employees by occupation, 2006, excluding maternity leave**

	Incidence <sup>1</sup>			Inactivity rate <sup>2</sup>			Days lost per worker in year <sup>3</sup>		
	Total	Illness or disability	Personal or family responsibilities	Total	Illness or disability	Personal or family responsibilities	Total	Illness or disability	Personal or family responsibilities
		%			%			days	
<b>All occupations</b>	<b>8.2</b>	<b>5.8</b>	<b>2.4</b>	<b>3.9</b>	<b>3.0</b>	<b>0.9</b>	<b>9.7</b>	<b>7.6</b>	<b>2.1</b>
Management	5.7	3.6	2.0	2.4	1.7	0.6	5.9	4.3	1.6
Business, finance and administrative	9.1	6.3	2.8	3.9	3.0	0.9	9.7	7.5	2.2
Professional	7.0	4.6	2.4	2.6	1.9	0.7	6.6	4.8	1.7
Financial and administrative	8.5	5.8	2.8	3.6	2.8	0.8	9.1	7.0	2.1
Clerical	9.8	7.0	2.8	4.3	3.4	1.0	10.8	8.4	2.4
Natural and applied sciences	7.3	4.6	2.6	2.7	1.9	0.9	6.8	4.6	2.1
Health	10.2	8.0	2.2	5.8	4.8	1.1	14.6	12.0	2.7
Professional	7.1	4.5	2.6	3.4	2.0	1.3	8.4	5.0	3.3
Nursing	11.4	9.4	2.0	7.0	5.9	1.1	17.6	14.9	2.7
Technical	9.5	7.7	1.9	5.4	4.7	0.7	13.5	11.7	1.8
Support staff	10.7	8.1	2.6	6.1	4.9	1.2	15.3	12.2	3.0
Social and public service	9.0	6.4	2.6	4.0	2.9	1.1	9.9	7.2	2.8
Legal, social and religious	9.1	6.6	2.5	3.9	2.9	1.0	9.8	7.3	2.5
Teachers and professors	8.9	6.2	2.7	4.0	2.8	1.2	10.0	7.1	3.0
Secondary and elementary	10.0	7.1	2.9	4.6	3.2	1.4	11.4	8.0	3.4
Other	6.4	4.2	2.2	2.8	2.0	0.8	7.1	5.0	2.1
Culture and recreation	7.5	5.0	2.5	2.8	1.9	0.9	7.0	4.8	2.1
Sales and service	7.6	5.6	2.0	3.9	3.1	0.8	9.7	7.7	2.0
Wholesale	5.7	3.7	2.0	2.3	1.6	0.7	5.8	4.1	1.8
Retail	7.3	5.4	2.0	3.7	2.9	0.8	9.3	7.3	2.0
Food and beverage	7.0	5.4	1.7	3.9	3.2	0.7	9.7	7.9	1.8
Protective services	7.6	5.6	2.0	4.3	3.3	1.1	10.9	8.2	2.7
Childcare and home support	10.4	7.5	2.9	4.9	3.9	1.0	12.3	9.6	2.6
Travel and accommodation	8.7	6.6	2.1	4.7	3.8	0.9	11.7	9.5	2.1
Trades, transport and equipment operators	8.3	6.0	2.3	4.4	3.6	0.8	10.9	8.9	2.1
Contractors and supervisors	5.9	3.7	2.2	2.7	2.2	0.6	6.8	5.4	1.4
Construction trades	8.6	6.3	2.2	4.6	3.6	1.0	11.4	9.0	2.4
Other trades	8.5	5.9	2.6	4.2	3.4	0.9	10.6	8.4	2.2
Transport equipment operators	7.5	5.6	2.0	4.5	3.8	0.7	11.4	9.5	1.9
Helpers and labourers	9.5	7.3	2.2	4.9	4.1	0.8	12.2	10.3	1.9
Occupations unique to primary industry	6.0	4.1	1.9	3.4	2.7	0.7	8.4	6.7	1.7
Occupations unique to production	9.5	7.1	2.4	4.8	4.0	0.8	12.0	9.9	2.1
Machine operators and assemblers	9.5	7.0	2.5	4.7	3.9	0.9	11.8	9.7	2.1
Labourers	9.4	7.4	2.0	5.0	4.2	0.8	12.5	10.6	1.9

1 Absent workers divided by total.

2 Hours absent divided by hours usually worked.

3 Inactivity rate multiplied by working days in year (250).

Source: Labour Force Survey



**Table 5 Absence rates for full-time employees by workplace size, job tenure, job status and union coverage, 2006, excluding maternity leave**

	Incidence <sup>1</sup>			Inactivity rate <sup>2</sup>			Days lost per worker in year <sup>3</sup>		
	Total	Own illness or disability	Personal or family responsibilities	Total	Own illness or disability	Personal or family responsibilities	Total	Own illness or disability	Personal or family responsibilities
<b>Workplace size</b>		%			%		days		
<b>Both sexes</b>	<b>8.2</b>	<b>5.8</b>	<b>2.4</b>	<b>3.9</b>	<b>3.0</b>	<b>0.9</b>	<b>9.7</b>	<b>7.6</b>	<b>2.1</b>
Under 20 employees	7.1	4.8	2.3	3.3	2.5	0.8	8.2	6.2	1.9
20 to 99 employees	8.1	5.7	2.4	3.7	2.9	0.9	9.3	7.2	2.2
100 to 500 employees	9.0	6.6	2.4	4.4	3.5	0.9	11.0	8.7	2.3
Over 500 employees	9.4	7.0	2.4	4.8	3.9	0.9	12.0	9.7	2.3
<b>Job tenure</b>									
<b>Both sexes</b>	<b>8.2</b>	<b>5.8</b>	<b>2.4</b>	<b>3.9</b>	<b>3.0</b>	<b>0.9</b>	<b>9.7</b>	<b>7.6</b>	<b>2.1</b>
1 to 12 months	7.3	5.1	2.2	3.0	2.2	0.7	7.4	5.6	1.8
Over 1 to 5 years	8.1	5.7	2.4	3.7	2.8	0.9	9.2	6.9	2.2
Over 5 to 9 years	8.7	6.0	2.7	4.2	3.2	1.0	10.5	7.9	2.6
Over 9 to 14 years	8.5	6.0	2.5	4.2	3.3	0.9	10.6	8.3	2.3
Over 14 years	8.6	6.4	2.2	4.7	3.9	0.7	11.6	9.8	1.9
<b>Job status</b>									
<b>Both sexes</b>	<b>8.2</b>	<b>5.8</b>	<b>2.4</b>	<b>3.9</b>	<b>3.0</b>	<b>0.9</b>	<b>9.7</b>	<b>7.6</b>	<b>2.1</b>
Permanent	8.3	5.9	2.4	4.0	3.1	0.9	9.9	7.8	2.2
Non-permanent	7.2	5.2	2.0	3.2	2.5	0.7	8.0	6.3	1.7
<b>Union coverage</b>									
<b>Both sexes</b>	<b>8.2</b>	<b>5.8</b>	<b>2.4</b>	<b>3.9</b>	<b>3.0</b>	<b>0.9</b>	<b>9.7</b>	<b>7.6</b>	<b>2.1</b>
Union member or covered by collective agreement	10.3	7.8	2.5	5.4	4.5	1.0	13.6	11.2	2.5
Non-unionized	7.2	4.9	2.3	3.2	2.4	0.8	7.9	5.9	2.0

1 Absent workers divided by total.

2 Hours absent divided by hours usually worked.

3 Inactivity rate multiplied by working days in year (250).

Source: Labour Force Survey

**Table 6 Absence rates for full-time employees by province, region and census metropolitan area (CMA), 2006, excluding maternity leave**

	Incidence <sup>1</sup>			Inactivity rate <sup>2</sup>			Days lost per worker in year <sup>3</sup>		
	Total	Illness or disability	Personal or family responsibilities	Total	Illness or disability	Personal or family responsibilities	Total	Illness or disability	Personal or family responsibilities
<b>Province and region</b>		%			%		days		
<b>Both sexes</b>	<b>8.2</b>	<b>5.8</b>	<b>2.4</b>	<b>3.9</b>	<b>3.0</b>	<b>0.9</b>	<b>9.7</b>	<b>7.6</b>	<b>2.1</b>
Atlantic	8.4	6.3	2.0	4.2	3.6	0.7	10.6	8.9	1.7
Newfoundland and Labrador	7.1	5.5	1.6	3.9	3.3	0.6	9.7	8.2	1.5
Prince Edward Island	7.3	5.2	2.1	3.4	2.8	0.6	8.5	6.9	1.6
Nova Scotia	8.5	6.4	2.2	4.3	3.6	0.7	10.7	8.9	1.8
New Brunswick	9.1	7.0	2.2	4.6	3.9	0.7	11.5	9.7	1.7
Quebec	8.9	6.6	2.4	4.6	3.7	0.9	11.5	9.3	2.2
Ontario	7.9	5.4	2.5	3.5	2.6	0.9	8.8	6.6	2.2
Prairies	8.4	5.9	2.5	3.8	2.9	0.9	9.5	7.2	2.3
Manitoba	8.8	6.3	2.5	4.0	3.3	0.8	10.1	8.1	1.9
Saskatchewan	9.2	6.6	2.7	4.4	3.5	0.9	11.0	8.7	2.3
Alberta	8.1	5.5	2.5	3.6	2.6	1.0	9.0	6.6	2.4
British Columbia	7.3	5.5	1.8	3.8	3.0	0.7	9.4	7.6	1.8
<b>CMA</b>									
<b>Both sexes</b>	<b>8.2</b>	<b>5.8</b>	<b>2.4</b>	<b>3.9</b>	<b>3.0</b>	<b>0.9</b>	<b>9.7</b>	<b>7.6</b>	<b>2.1</b>
All CMAs	8.2	5.8	2.4	3.8	2.9	0.9	9.4	7.3	2.1
St. John's	8.1	6.2	1.9	3.9	3.3	0.6	9.8	8.3	1.5
Halifax	8.8	6.4	2.4	4.0	3.3	0.8	10.1	8.1	1.9
Saint John	8.7	6.6	2.1	4.1	3.5	0.6	10.2	8.7	1.5
Saguenay	8.6	6.4	F	4.5	3.7	F	11.2	9.3	F
Québec	8.7	6.1	2.6	4.5	3.6	0.9	11.2	9.0	2.2
Montréal	9.2	6.8	2.5	4.5	3.5	1.0	11.3	8.8	2.5
Trois-Rivières	8.5	6.1	F	4.4	3.6	F	11.0	9.0	F
Sherbrooke	7.9	5.7	F	3.9	3.2	F	9.8	8.0	F
Gatineau	12.2	8.9	3.3	5.8	4.8	1.0	14.5	12.1	2.4
Ottawa	9.6	6.8	2.8	3.9	2.9	1.0	9.7	7.3	2.4
Kingston	9.5	6.8	F	4.8	3.7	F	11.9	9.3	F
Greater Sudbury/									
Grand Sudbury	8.4	5.9	F	4.2	3.3	F	10.6	8.3	F
Toronto	7.1	4.8	2.3	3.0	2.2	0.8	7.5	5.4	2.1
Hamilton	8.2	5.8	2.4	4.0	3.2	0.8	10.0	8.1	2.0
St. Catharines-Niagara	8.6	6.0	2.6	4.3	3.4	0.9	10.8	8.5	2.3
London	8.2	5.7	2.5	4.0	3.0	1.0	9.9	7.4	2.5
Windsor	8.4	5.3	3.1	4.1	2.8	1.3	10.2	7.0	3.3
Kitchener-Waterloo	7.9	5.4	2.5	3.3	2.7	0.6	8.2	6.6	1.6
Oshawa	8.7	6.1	2.6	4.1	3.3	0.8	10.3	8.3	2.0
Thunder Bay	9.6	7.2	F	4.9	4.1	F	12.4	10.3	F
Winnipeg	9.0	6.5	2.5	4.0	3.2	0.8	10.0	8.1	1.9
Regina	9.8	7.3	2.5	4.4	3.5	0.9	11.1	8.8	2.4
Saskatoon	8.6	6.1	2.5	3.9	3.0	0.9	9.7	7.4	2.3
Calgary	7.3	5.2	2.1	3.2	2.4	0.8	7.9	5.9	2.0
Edmonton	8.8	6.2	2.6	4.0	3.0	1.0	9.9	7.4	2.5
Abbotsford	8.1	6.0	F	4.1	3.2	F	10.3	8.1	F
Vancouver	6.9	5.2	1.7	3.5	2.9	0.6	8.8	7.1	1.6
Victoria	8.5	6.4	2.2	4.2	3.3	0.9	10.5	8.4	2.2
Non-CMAs	8.3	6.0	2.3	4.3	3.5	0.8	10.7	8.6	2.1
Urban Centres	8.3	5.8	2.5	3.9	3.0	0.9	9.8	7.6	2.2

1 Absent workers divided by total.

2 Hours absent divided by hours usually worked.

3 Inactivity rate multiplied by working days in year (250).

Source: Labour Force Survey



## Data source and definitions

The data in this article are annual averages from the **Labour Force Survey (LFS)**. They refer to full-time employees holding only one job. Part-time, self-employed and unpaid family workers are excluded because they generally have more opportunity to arrange their work schedules around personal or family responsibilities. Multiple jobholders, too, are excluded because it is not possible using LFS data to allocate time lost, or the reason for it, to specific jobs. Women on maternity leave are also excluded. Some human resource practitioners exclude persons on long-term illness or disability leave (exceeding one year) from their attendance management statistics. Such persons are, however, included in Statistics Canada's work absence estimates if they count themselves as employed (that is, they continue to receive partial or full pay from their employer). In 2006, the number of employed persons on such long-term illness or disability leave averaged only 23,000 in a typical week. Their exclusion would have reduced the weekly work absence incidence for illness or disability from 5.8% to 5.6%, the inactivity rate from 3.0% to 2.8%, and days lost per worker that year from 7.6 to 7.1.

**Personal reasons for absence** are split into two categories: 'own illness or disability' and 'personal or family responsibilities' (caring for own children, caring for elder relative, and other personal or family responsibilities). Absences for these two reasons represented about 29% of all time lost by full-time paid workers each week in 2006. Vacations, which accounted for about 40% of total time away from work, are not counted in this study, nor are statutory holidays, which represented 15%. Maternity leave represented 10% and other reasons, 6%.

The **incidence of absence** is the percentage of full-time paid workers reporting some absence in the reference week. In calculating incidence, the length of work absence—whether an hour, a day, or a full week—is irrelevant.

The **inactivity rate** shows hours lost as a proportion of the usual weekly hours of full-time paid workers. It takes into account both the incidence and length of absence in the reference week.

**Days lost per worker** are calculated by multiplying the inactivity rate by the estimated number of working days in the year (250).

### Reasons for work absences in the LFS

The LFS sets out the following reasons for being away from work:

- own illness or disability
- caring for own children
- caring for elder relative (60 years or older)
- maternity leave (women only)
- other personal or family responsibilities
- vacation
- labour dispute (strike or lockout)
- temporary layoff due to business conditions
- holiday (legal or religious)
- weather
- job started or ended during week
- working short time (because of material shortages, plant maintenance or repair, for instance)
- other

As normally published, personal or family responsibilities consist of caring for own children, caring for elder relative, and other personal or family responsibilities.

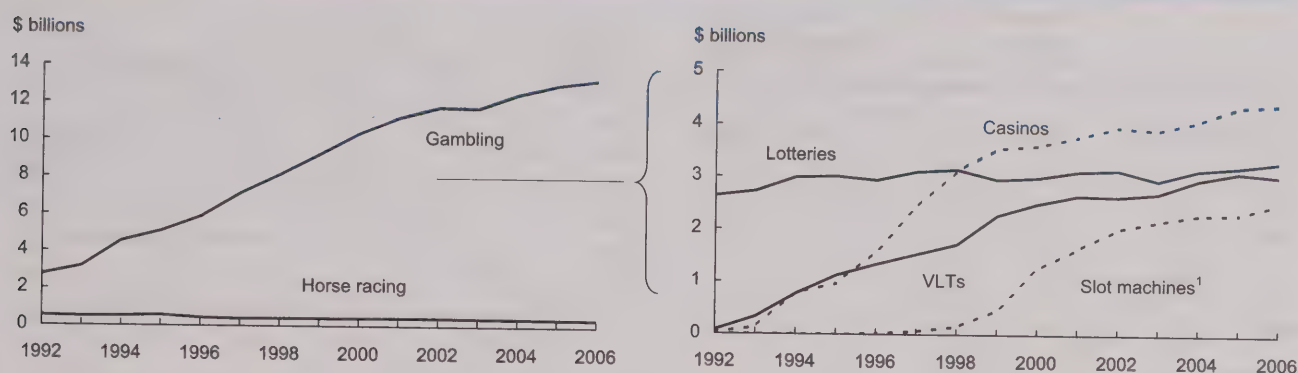
# Gambling

- Net revenue from government-run lotteries, video lottery terminals (VLTs), and casinos rose from \$2.7 billion in 1992 to 13.3 billion in 2006.<sup>1</sup>
- Net revenue from pari-mutuel betting (horse racing) dropped from \$532 million to \$387 million over the same period (1992 to 2006).
- In 2006, lotteries accounted for 25% of all net non-charity gambling revenue, casinos 33%, VLTs 23%, and slot machines not in casinos 19%.
- Average gambling revenue per person 18 and over in 2005 ranged from \$111 in the three territories to \$750 in Alberta, with a national average of \$513.<sup>2</sup>
- Compared with workers in non-gambling industries, those in gambling were more likely to be women (54% versus 47%), paid by the hour (79% versus 65%), and paid less (\$18 hourly versus \$20) and receiving tips at their job (30% versus 7%).
- Employment in the gambling industry rose from 11,000 in 1992 to 40,000 in 2006.
- One in seven women and men living alone reported spending money on casinos, slot machines or VLTs; however, the men spent more than three times as much as the women—\$1,396 compared with \$434.<sup>3</sup>
- Gambling participation and expenditure rates increased with household income. For example, 57% of households with incomes of less than \$20,000 gambled in 2005 and spent an average of \$491, while equivalent figures for those with incomes of \$80,000 or more were 75% and \$618.

*For further information on any of these data, contact Katherine Marshall, Labour and Household Surveys Analysis Division. She can be reached at 613-951-6890 or [katherine.marshall@statcan.ca](mailto:katherine.marshall@statcan.ca).*



## Net revenue from government-run gambling has increased steadily



1 Refers to ones found outside government-run casinos.  
Source: National Accounts

## Gambling revenues and profits

	Gambling revenue <sup>1</sup>		Gambling profit <sup>2</sup>		Share of total revenue <sup>3</sup>		Revenue per capita (18+) <sup>4</sup>	
	1992	2005	1992	2005	1992	2005	1992	2005
	\$ millions (current)				%		\$	
<b>Canada</b>	<b>2,734</b>	<b>12,984</b>	<b>1,680</b>	<b>7,101</b>	<b>1.9</b>	<b>5.5</b>	<b>128</b>	<b>513</b>
Newfoundland and Labrador	80	205	42	109	2.3	5.2	189	496
Prince Edward Island	20	37	7	15	2.7	3.4	209	344
Nova Scotia	125	362	72	169	2.8	5.4	180	485
New Brunswick	117	211	49	117	2.7	3.5	209	351
Quebec	693	2,961	472	1,618	1.8	4.9	128	489
Ontario	853	4,745	529	2,016	1.9	6.0	106	485
Manitoba	153	556	105	318	2.5	5.9	186	623
Saskatchewan	62	490	39	311	1.1	5.6	86	653
Alberta	225	1,882	125	1,513	1.6	6.3	118	750
British Columbia	403	1,528	239	909	2.2	5.1	153	450
Yukon, Northwest Territories and Nunavut	5	8	1	6	0.3	0.3	82	111

1 Total revenue from wagers on government-controlled lotteries, casinos and VLTs, minus prizes and winnings.

2 Net income of provincial governments from total gambling revenue, less operating and other expenses (see *Data sources and definitions*).

3 The 2005 share of total revenue calculation is based on 2005 gambling revenue and 2004 total provincial revenue. The 2005 provincial revenue will be available autumn 2007.

4 Persons 18 and over were selected as this is the legal age of gambling in most provinces.

Sources: National Accounts, Public Institutions (Financial management statistics) and post-censal population estimates.

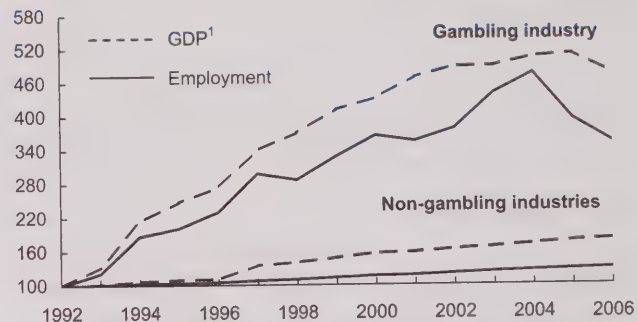
### Characteristics of workers

	Gambling		Non-gambling	
	1992	2006	1992	2006
<b>Total employed</b>	<b>11</b>	<b>40</b>	<b>12,720</b>	<b>16,444</b>
			'000	
<b>Sex</b>				
Men	35	46	55	53
Women	65	54	45	47
			%	
<b>Age</b>				
15 to 34	57	40	45	37
35 and over	43	60	55	63
<b>Education</b>				
High school or less	66	50	57	42
Postsecondary certificate or diploma	21	36	27	35
University degree	13	14	16	23
<b>Work status</b>				
Full-time	60	84	81	82
Part-time	40	16	19	18
<b>Provinces</b>				
Atlantic provinces	8	4	7	7
Quebec	F	13	24	23
Ontario	28	46	39	39
Prairie provinces	30	19	17	18
British Columbia	25	19	13	13
<b>Class of worker</b>				
Employee	99	99	85	85
Self-employed	F	F	15	15

Source: Labour Force Survey

### Gambling outpaced other industries

1992=100



1 The price, at basic prices, of the goods and services produced. The GDP figures for the gambling industry refer strictly to wagering activities, such as lottery ticket sales, VLT receipt sales, and bets at casinos. Other economic spinoffs, such as hotel and restaurant business, security services, or building and equipment maintenance are not included.

Sources: Labour Force Survey; National Accounts

### Characteristics of jobs

	Gambling		Non-gambling	
	1997	2006	1997	2006
<b>Employees<sup>1</sup></b>	<b>33</b>	<b>40</b>	<b>11,323</b>	<b>13,947</b>
			'000	
			%	
Unionized <sup>2</sup>	29	26	34	32
Non-unionized	71	74	66	68
Permanent job	91	92	89	87
Temporary job	9	8	11	13
Usually receive tips	27	30	7	7
No tips	73	70	93	93
Paid by the hour	80	79	61	65
Not paid hourly	20	21	39	35
<b>Average hourly earnings<sup>3</sup></b>				
			\$	
Men: full-time	13.51	20.37	17.83	22.44
Women: full-time	13.04	17.40	14.79	19.20

1 More detailed questions on employees were introduced with the 1997 revision of the Labour Force Survey.

2 Includes persons who are not union members, but whose jobs are covered by collective agreements.

3 Includes tips and commissions.

Source: Labour Force Survey



## Household expenditures on gambling activities

	At least one gambling activity		Government lotteries		Other lotteries/raffles, etc.		Casinos, slot machines and VLTs		Bingos	
	\$	%	\$	%	\$	%	\$	%	\$	%
<b>All households</b>										
2000	492	74	245	64	84	31	546	21	743	9
2001	513	72	257	62	98	30	554	20	815	9
2002	570	73	263	63	129	30	679	21	905	8
2003	506	74	243	66	96	29	670	19	799	8
2004	514	71	265	61	101	28	664	19	805	6
2005	549	69	254	61	142	27	720	18	963	6
<b>One-person households<sup>1</sup></b>										
Men	534	61	218	51	256	19	842	14	829	6
18 to 44	763	61	297	54	573	17	1,396	14	487	3
45 to 64	771	59	208	51	147	15	1,848	17	733	1
65 and over	881	66	317	61	1,155	20	1,154	13	238	2
Women	512	58	446	48	124	15	275	10	563	7
18 to 44	369	61	155	49	64	20	434	14	906	8
45 to 64	322	61	109	50	53	27	259	14	2,263	4
65 and over	316	65	151	54	62	20	562	12	599	8
	435	58	187	45	76	16	466	15	769	11
<b>All households</b>										
Newfoundland and Labrador	487	68	268	59	87	35	544	8	751	13
Prince Edward Island	513	71	266	53	93	45	415	13	1,223	10
Nova Scotia	620	74	278	62	85	41	1,164	16	691	10
New Brunswick	451	70	256	62	70	37	327	11	1,001	10
Quebec	428	73	243	68	253	15	559	13	553	6
Ontario	603	68	266	59	128	27	654	21	1,298	6
Manitoba	676	69	266	54	71	34	990	22	833	10
Saskatchewan	517	73	230	58	100	48	693	24	457	6
Alberta	576	66	225	53	150	38	817	18	1,114	6
British Columbia	608	68	258	60	146	26	964	19	968	4
<b>Income after tax</b>										
Less than \$20,000	491	57	190	47	77	12	840	11	899	10
\$20,000 to \$39,999	539	66	244	58	228	20	673	15	1,044	7
\$40,000 to \$59,999	527	73	262	65	111	29	576	19	1,314	6
\$60,000 to \$79,999	555	74	285	65	104	34	738	20	783	6
\$80,000 and over	618	75	270	65	148	39	836	24	578	5

1 Using one-person households allows examination of individual characteristics. Persons 18 and over were selected as this is the legal age for gambling in most provinces.

Note: Expenditures are per spending household. Unless otherwise indicated, figures are for 2005.

Source: Survey of Household Spending

## Data sources and definitions

**Labour Force Survey:** a monthly household survey that collects information on labour market activity, including detailed occupational and industrial classifications, from all persons 15 years and over.

**National Accounts:** The quarterly Income and Expenditure Accounts (IEA) is one of several programs constituting the System of National Accounts. The IEA produces detailed annual and quarterly income and expenditure accounts for all sectors of the Canadian economy, namely households, businesses, governments and non-residents.

**Survey of Household Spending (SHS):** an annual survey that began in 1997 and replaced the Family Expenditure Survey and the Household Facilities and Equipment Survey. The SHS collects data on expenditures, income, household facilities and equipment, and other characteristics of families and individuals living in private households.

**Gambling industries:** This industry group covers establishments primarily engaged in operating gambling facilities, such as casinos, bingo halls and video gaming terminals; or providing gambling services, such as lotteries and off-track betting. It excludes horse race tracks and hotels, bars and restaurants that have casinos or gambling machines on the premises.

**Gambling profit:** net income from provincial and territorial government-run lotteries, casinos and VLTs, after prizes and winnings, operating expenses (including wages and salaries), payments to the federal government and other overhead costs are deducted.

**Gambling revenue:** all money wagered on provincial and territorial government-run lotteries, casinos and VLTs, less prizes and winnings. Gambling revenue generated by and for charities and on Indian reserves is excluded.

**Government casino:** a government-regulated commercial casino. Permits, licences and regulations for casinos, both charity and government, vary by province. Government casinos, now permitted in several provinces, also vary by the degree of public and private involvement in their operations and management. Some government casinos are run entirely as Crown corporations, while others contract some operations—for example, maintenance, management or services—to the private sector.

**Video lottery terminal (VLT):** a coin-operated, free-standing, electronic game of chance. Winnings are paid out through receipts that are turned in for cash, as opposed to cash payments from slot machines. Such terminals are regulated by provincial lottery corporations.

## Household expenditure on all gambling activities by income groups, 2005

	Average expenditure		Percentage reporting	Gaming as % of total income	
	All households	Reporting households		All households	Reporting households
<b>Income after tax</b>	<b>\$ 380</b>	<b>\$ 549</b>	<b>69</b>	<b>0.6</b>	<b>0.8</b>
Less than \$20,000	277	491	57	2.0	3.6
\$20,000 to \$39,999	358	539	66	1.2	1.8
\$40,000 to \$59,999	383	527	73	0.8	1.1
\$60,000 to \$79,999	412	555	74	0.6	0.8
\$80,000 and over	465	618	75	0.4	0.5

Source: Survey of Household Spending

## Notes

1 Refers to total money wagered on non-charity lotteries, casinos and VLTs, minus prizes and winnings.

2 Survey of Household Spending (SHS) and National Accounts rankings of provincial expenditures differ, in part because the SHS includes both charity and non-charity gambling activity.

3 The expenditure figures are not adjusted for any winnings. As well, households consistently under-report the amount of money they spend on gambling. Comparisons with Lottery Corporation figures, for example, have shown that households under-report their government lottery purchases by more than 50%.



YOUR INDESPENSIBLE  
TOOL FOR DOING BUSINESS

# Market Research Handbook 2005

Whether you regularly make major business decisions or want merely to hone your business savvy from time to time, *Market Research Handbook (MRH) 2005* contains the market information you need.

## ***RELY ON MARKET RESEARCH HANDBOOK 2005 TO PROVIDE THE ESSENTIAL INDICATORS.***

- ✓ Key demographic variables  
Population, age, household spending, education, sex and more
- ✓ Vital economic indicators  
Labour force, consumer and industrial price indexes, international trade, gross domestic product and more
- ✓ Business demographics  
Industry sectors, business types and sizes, urban areas and more

## ***WITH OUR NEW 2005 EDITION, FINDING EXACTLY WHAT YOU ARE LOOKING FOR IS SIMPLE.***

- ✓ Over 300 easy-to-read pages
- ✓ More than 150 tables, 25 charts and graphs
- ✓ Data from local, regional and national perspectives, plus population estimates for 45 urban centres across Canada
- ✓ Choose print or PDF format

## ***WHY WAIT TO ORDER?***

Order your copy today for only \$134 plus taxes and gain access to the wealth of information contained in *Market Research Handbook*.

CALL: Toll-free 1 800 267-6677  
FAX: Toll-free 1 877 287-4369  
E-MAIL: [infostats@statcan.ca](mailto:infostats@statcan.ca)  
MAIL: Statistics Canada, Finance,  
6-H, R.H. Coats Building,  
Tunney's Pasture,  
Ottawa, Ontario K1A 0T6

Print format: In Canada, please add either GST and applicable PST or HST. No shipping charges for delivery in Canada. For shipments to the United States, please add \$6 per issue. For shipments to other countries, please add \$10 per issue. Federal government clients must indicate their IS Organization Code and IS Reference Code on all orders.

**MRH is also available  
in PDF format for  
FREE!**

Get MRH online right now. Enjoy the complete print edition in PDF format. Visit  
[www.statcan.ca/english/ads/63-224-XPB/index.htm](http://www.statcan.ca/english/ads/63-224-XPB/index.htm)

# PERSPECTIVES

## ON LABOUR AND INCOME

### To keep up with ...

- the distribution of income and trends in wages in the country
- the education levels and the training of the labour force in Canada
- updates on research under way in the labour and income field
- the availability of new income and labour market data

### ... you need

**PERSPECTIVES ON LABOUR AND INCOME** (Catalogue no. 75-001-XPE) from Statistics Canada.

A yearly subscription to **Perspectives on Labour and Income** (four issues) costs just \$63.

Mail your order to Statistics Canada, Finance Division, R.H. Coats Bldg., 6th floor, 100 Tunney's Pasture Driveway, Ottawa, Ontario K1A 0T6. Or fax 1 877 287-4369 (Canada and United States) or call 1 800 267-6677 (Canada and United States) and use your VISA or MasterCard, or e-mail [infostats@statcan.ca](mailto:infostats@statcan.ca)



Catalogue no. 75-001-XPE



# PERSPECTIVES

## ON LABOUR AND INCOME

**AUTUMN 2007**

Vol. 19, No. 3

- NON-PROFIT ORGANIZATIONS
- ABSENTEEISM
- WORKING AT HOME
- LIFE AFTER HIGH TECH
- OLDER WORKERS
- PUBLIC PENSIONS AND WORK
- VARIA  
*Unionization*



Statistics Canada  
Statistique Canada

Canada

## At Your Service...

### How to obtain more information

Specific inquiries about this product and related statistics or services should be directed to: *Perspectives on Labour and Income*, 9 A-6 Jean Talon, 170 Tunney's Pasture Driveway, Statistics Canada, Ottawa, Ontario, K1A 0T6 (telephone: (613) 951-4628; e-mail: [perspectives@statcan.ca](mailto:perspectives@statcan.ca)).

For information about this product or the wide range of services and data available from Statistics Canada, visit our website at [www.statcan.ca](http://www.statcan.ca) or contact us by e-mail at [infostats@statcan.ca](mailto:infostats@statcan.ca) or by phone from 8:30am to 4:30pm Monday to Friday at:

#### **Toll-free telephone** (Canada and the United States):

Inquiries line	1-800-263-1136
National telecommunications device for the hearing impaired	1-800-363-7629
Fax line	1-877-287-4369
Depository Services Program inquiries line	1-800-635-7943
Depository Services Program fax line	1-800-565-7757

<b>Statistics Canada national contact centre:</b>	1-613-951-8116
Fax line	1-613-951-0581

### Ordering/subscription information

This product can be ordered by

- telephone (Canada and United States) **1 800 267-6677**
- fax (Canada and United States) **1 877 287-4369**
- e-mail **[infostats@statcan.ca](mailto:infostats@statcan.ca)**
- mail Statistics Canada  
Finance Division  
R.H. Coats Bldg., 6th Floor  
100 Tunney's Pasture Driveway  
Ottawa, Ontario K1A 0T6
- In person from authorised agents and bookstores

When notifying us of a change in your address, please provide both old and new addresses.

### Standards of service to the public

Statistics Canada is committed to serving its clients in a prompt, reliable and courteous manner. To this end, the Agency has developed standards of service, which its employees observe in serving its clients. To obtain a copy of these standards, please contact Statistics Canada toll free at 1-800-263-1136. The standards are also published on [www.statcan.ca](http://www.statcan.ca) under About us > Providing services to Canadians.



## PERSPECTIVES

ON LABOUR AND INCOME

## ■ Departments

- 3 Highlights  
 47 What's new?  
 51 Varia  
*Unionization*

## ■ Articles

## 5 Labour inputs to non-profit organizations

*Leroy Stone and Hasbeem Nouroz*

More than 160,000 non-profit and voluntary institutions provide employment for about two million Canadians. These organizations constitute one of the faster growing sectors of the Canadian economy, accounting for 7% of gross domestic product in 2003. They come in a variety of forms and deliver goods and services in many areas. However, their use of labour in most cases differs radically from that of profit-oriented businesses. This study describes and quantifies the multiple labour inputs used by non-profits.

## 13 Trends and seasonality in absenteeism

*Ernest B. Akyeampong*

Past studies of illness-related work absences have focused on annual figures and have not differentiated between full- and part-week absences. But the two have quite different seasonal patterns and long-term trends.

## 17 Working at home: An update

*Ernest B. Akyeampong*

The strong growth of telework in the 1990s seems to have stalled since the turn of the century. Despite significant improvements in the infrastructure, the fall-off in telework popularity has been pervasive.

## 21 Life after high tech

*Marc Frenette*

During the 1990s, the high-tech sector expanded at a much greater rate than the rest of the economy, its employment eventually representing 4.5% of the workforce in 2000. Then came the meltdown in 2001 with its headlines of large-scale layoffs. Many were unable to find other jobs in the sector, and some moved to other cities. The article looks at the statistics behind the headlines, in particular the permanent layoff rates and earnings of high-tech workers compared with those in other industries.

**Perspectives on Labour and Income**  
 (Catalogue no. 75-001-XPE; aussi disponible en français: *L'emploi et le revenu en perspective*, n° 75-001-XPF au catalogue) is published quarterly by authority of the Minister responsible for Statistics Canada.  
 ©Minister of Industry 2007. ISSN: 0840-8750.

PRICE: CAN \$20.00 per issue, CAN \$63.00 for a one-year subscription.

## Shipping charges outside Canada:

	Single issue	Annual subscription
United States	CAN \$ 6.00	CAN \$24.00
Other countries	CAN \$10.00	CAN \$40.00

All prices exclude sales taxes.

All rights reserved. This product cannot be reproduced and/or transmitted to any person or organization outside of the licensee's organization.

Reasonable rights of use of the content of this product are granted solely for personal, corporate or public policy research, or for educational purposes. This permission includes the use of the content in analyses and the reporting of results and conclusions, including the citation of limited amounts of supporting data extracted from this product. These materials are solely for non-commercial purposes. In such cases, the source of the data must be acknowledged as follows: Source (or "Adapted from" if appropriate): Statistics Canada, year of publication, name of product, catalogue number, volume and issue numbers, reference period and page(s). Otherwise, users shall seek prior written permission of Licensing Services, Client Services Division, 100 Tunney's Pasture Driveway, Statistics Canada, Ottawa, Ontario, K1A 0T6.

Indexed in the *Canadian Index*, *Canadian Periodical Index*, *P.A.I.S. International*, *Sociological Abstracts*, *Econlit*, *Canadian Business and Current Affairs* and *Employee Benefits Infosource*. Also indexed in French in *L'Index de l'Actualité* and *Point de Repère*.

■ **Managing Editor**  
Henry Pold  
613-951-4608  
henry.pold@statcan.ca

■ **Editors**  
Sheila Kulka  
Lahouaria Yssaad

■ **Data Services**  
Joanne Bourdeau  
Laura Fraser

■ **Production and Composition**  
Ann Trépanier  
Annamma John

■ **Printing**  
Dissemination Division

■ **Cover Art**  
Pamela Moren

## 31 Participation of older workers

*Katherine Marshall and Vincent Ferrao*

For some years now, attention has been focused on the predicted retirement patterns of the baby-boom generation since a wave of early departures could seriously disrupt the labour force. However, recent studies and indicators suggest that baby boomers may not in fact be collectively fleeing employment for 'freedom 55.' In 2006, a record proportion of 60 to 64 year-olds were in the labour force (45%) and the retirement age remained steady at 61.5. The article examines labour market trends of the population aged 55 to 64 and the employment characteristics of workers in this age group vis à vis those aged 25 to 54.

## 39 Public pensions and work

*Ted Wannell*

"Do I have enough money to retire?" is a question that older workers have been trained to ask themselves as they consider the transition out of the workplace. The financial tally includes employer pension plans, registered savings plans and other investments, as well as entitlement to public benefits—the Canada and Quebec Pension Plan (C/QPP) and Old Age Security/Guaranteed Income Supplement. These resources are balanced against projected spending and other considerations, such as health, family demands and leisure activities. Take-up rates of C/QPP benefits, co-receipt of C/QPP and other benefits, and employment following benefit take-up are examined for taxfilers in their 60s.

### Symbols

The following standard symbols are used in Statistics Canada publications:

- . not available for any reference period
- .. not available for a specific reference period
- ... not applicable
- p preliminary
- r revised
- x confidential
- E use with caution
- F too unreliable to be published

The paper used in this publication meets the minimum requirements of American National Standard for Information Sciences – Permanence of Paper for Printed Library Materials, ANSI Z39.48 – 1984.



# Highlights

## *In this issue*

### ■ Labour inputs to non-profit organizations

... p. 5

- From 1997 to 2003, the gross domestic product of the non-profit sector grew at an annual rate of 6.4%, faster than the economy as a whole.
- The full-time equivalent distribution of labour in non-profit organizations is 36% volunteers and 64% employees and contractors.
- Of the total volunteer full-time equivalents, 77% are supplied by frequent volunteers.

### ■ Trends and seasonality in absenteeism

... p. 13

- The weekly number of employees missing work because of an illness or disability increased from 431,000 in 1997 to 758,000 in 2006—from 3.8% to 5.4% of total employees.
- Full-week absences increased by about one-third, but part-week absences more than doubled between 1997 and 2006.
- Illness-related absences peak in the winter months (December to February). Most of the peak is due to part-week absences.

### ■ Working at home: An update

... p. 17

- The estimated number of teleworkers climbed from just over 600,000 in 1991 to 1.4 million in 2000.
- Since 2000, telework has seen virtually no growth, except among older employees and those with lower levels of education.

### ■ Life after high tech

... p. 21

- The high-tech sector experienced a sharp decline in 2001 after leading economic growth during the 1990s. Nationally, the permanent layoff rate in this sector jumped from 2.1% in 2000 to 5.3% in 2001.
- Among the major high-tech centres, Ottawa-Gatineau registered the largest increase in its high-tech permanent layoff rate, from 2.2% in 2000 to 10.9% in 2001.
- Among high-tech workers who were laid off in 2001, average annual earnings declined from \$50,200 in 2000 to \$37,800 in 2002. Two years after layoff, average earnings were still well below their pre-layoff level (\$42,300 in 2003).

### ■ Participation of older workers

... p. 31

- Over the last decade the proportion of older workers (those aged 55 to 64) has risen, with 6 in 10 employed or looking for work in 2006. This group represented 12% of the labour force (2.1 million).
- The main thrust behind the upward trend is women's labour force participation rate, which rose from 38% to 62% between 1976 and 2006 for those aged 55 to 59, and from 24% to 37% for those aged 60 to 64.
- One in 4 older workers is self-employed and 1 in 5 works part time. Part-time work is one of the few job characteristics that is notably different for older and core-aged workers (those aged 25 to 54), suggesting transitional changes before retirement.
- Two-thirds of older workers who work part time do so from choice compared with only 28% of core-aged, part-time workers.

## ■ Public pensions and work ... p. 39

- The vast majority of workers take up Canada and Quebec Pension Plan (C/QPP) benefits before the age of 65, and an increasing proportion start them at age 60.
- Among those with employer pension benefits and no employment earnings, nearly 4 in 5 started C/QPP benefits at age 60. For those combining work and employer pension benefits at age 59, the take-up rate was 3 in 5. Take-up rates at age 60 were only 26% for workers without employer pension coverage and 17% for those with coverage.
- In 1996, 39% of new C/QPP beneficiaries did some work for pay. By 2004, the proportion had jumped to 48%. Post-retirement work was more common among men and highest among persons not covered by an employer pension in their pre-retirement job.
- Between 1996 and 2004, the proportion of C/QPP pensioners earning \$5,000 or less declined. This decline was more than offset by strong growth among those earning between \$5,000 and \$20,000, and even more among those earning over \$20,000.

## ■ What's new? ... p. 47

### ■ From Statistics Canada

- Persistence of low income among working-aged unattached individuals
- Labour productivity
- Income of individuals
- Family income
- Impact of immigration on labour markets in Canada, Mexico and the United States
- Service offshoring and employment
- Income inequality and redistribution

### ■ From other organizations

- Exporting and FDI with endogenous productivity
- Overemployment mismatches: the preference for fewer hours
- Wage differentials associated with working at home
- Employment dynamics: small and large firms over the business cycle

### Perspectives



# Labour inputs to non-profit organizations

Leroy Stone and Hasbeem Nouroz

**N**on-profit institutions (NPIs) constitute a significant and growing segment of the Canadian economy. From 1997 to 2003, the gross domestic product of the non-profit sector grew at an annual rate of 6.4%, faster than the economy as a whole (Hamdad et al. 2006). In 2003, the sector accounted for 7% of GDP, and more than 160,000 non-profit and voluntary organizations provided employment for about two million persons (Hall et al. 2004). Close to 20% of non-government employees worked for NPIs in that year, according to the Workplace and Employee Survey.

But the importance of NPIs extends beyond their share of GDP or their contribution to job creation. Non-profit organizations assume a wide variety of forms and deliver goods and services in many areas of society. This article classifies NPIs into 12 groups: arts and culture; sports and recreation; education and research; health and hospitals; social services; environment; housing and development; law and advocacy; grant-making, fundraising and voluntarism promotion; international; religion; and professional associations.<sup>1</sup>

In the face of major challenges in the field of human resources management and planning, leaders of NPIs need to be well informed about the composition of their human resources. For example, an aging of the labour force and a slowdown in the pace of labour force growth are leading to increased competition for good workers among organizations—NPIs included. And this in an era when operational financing is becoming more difficult (Hall et al. 2003).

So far, analysts have tended to quantify human-resource inputs merely in terms of the numbers of volunteers, employees and contractors. Unfortunately,

simply adding the numbers for these three classes is rarely useful. Even among employees, adding the number of full-time and part-time employees has very limited usefulness for analysis and planning. Moreover, some employees work in two or more establishments, and thus risk being double-counted. This problem seems to be even worse with volunteers.

Instead of counting workers, it is better to use a unit of measurement such as hours of work per week, collected for every type of labour. The National Survey of Non-profit and Voluntary Organizations (NSNVO) of 2003 has gone a long way toward providing hours-of-work information for multiple kinds of labour inputs to NPIs. However, its handling of hours of work varies among the sources of labour. As a result, assumptions are required to integrate its hours-of-work data. These assumptions emerged from the Labour Inputs to Non-Profit Organizations Project, which aims to develop a procedure for

## Key concepts

Both the volume and composition of the labour inputs to NPIs are important. 'Composition of labour inputs' means the percentages of different types of labour. Seven types have been identified for this study: full-time employees, part-time employees, full-time contractors, part-time contractors, board members, frequent (more than twice a year) volunteers, and infrequent (only once or twice a year) volunteers.

To compute this percentage distribution, a standard unit of measure—the full-time equivalent (FTE) is used. The FTE is based on an arbitrary but widely accepted convention: a full-time employee working for one week represents one FTE, which is often considered to represent 40 hours of work. (This number is assumed to be the usual average weekly hours for full-time employees.) No other class of worker has an FTE value greater than 1, and the other classes' typical FTEs (also called 'standard labour units') are expressed as fractions of 1. For example, a typical part-time employee usually working an average of 20 hours would have an FTE of 0.5. To prepare the estimates in this paper, typical FTEs were established for each of the seven kinds of labour. (For further details see Nouroz and Stone 2007, Appendix A.)

*Leroy Stone is with the Unpaid Work Analysis Division. He can be reached at 613-951-9752 or [leroy.stone@statcan.ca](mailto:leroy.stone@statcan.ca). Hasbeem Nouroz is with the Industry Accounts Division. She can be reached at 613-951-2538 or [hasbeem.nouroz@statcan.ca](mailto:hasbeem.nouroz@statcan.ca).*

comprehensive estimation of the use of human resources by non-profit organizations (see Nouroz and Stone 2007 for technical details).

This article provides some of the project's results concerning the composition of labour inputs to NPIs (see *Key concepts*). The project represents a key, even if small step toward filling a major information gap. According to a Conference Board vice-president: "The 21st century will belong to human resources and to organizational capabilities, leading management guru Dave Ulrich assured The Conference Board of Canada. And the Board agrees." (Benimadhu 2006).

### Labour inputs in various organizations

For-profit and non-profit sectors are alike in one notable respect: Close to 40% of organizations are very small—over 60% of establishments have less than 10 employees (Table 1). However, more non-profit organizations have 50 or more employees (11% versus 5%).

Consequently, employees in the non-profit sector are more likely to work in large establishments. According to the Workplace and Employee Survey, 82% work in establishments of 50 or more employees, compared with only 46% in the for-profit sector. In the NSNVO, with a different universe and different questions, the corresponding percentage is 78%.<sup>2</sup> This reflects the pre-eminence of educational and health institutions in the total volume of paid labour supplied to NPIs. However, even when these institutions are excluded, NPI employees still tend to have a greater concentration in large establishments than do business employees.

A distinctive feature of non-profit organizations is that they rely heavily on volunteers—the percentages of volunteers in government and business organizations are probably much smaller<sup>3</sup> (Chart A). Moreover, recruiting and retaining volunteers has become a major challenge and source of worry for a large proportion of NPI leaders. Most reported declines in the availability

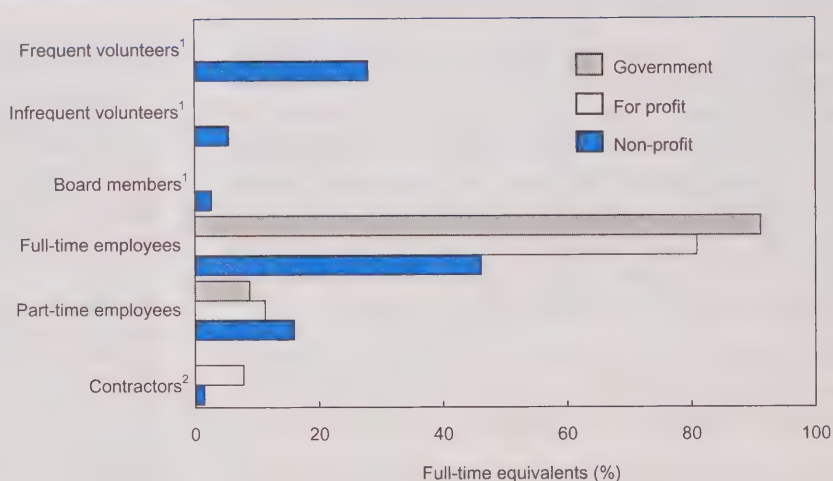
**Table 1 Employees and organizations by size-class of organization and sector**

	Total	Employees in organization				
		1-4	5-9	10-19	20-49	50 or more
	'000			%		
<b>Employees</b>						
For profit	9,704	7.3	11.9	14.6	20.0	46.2
Not for profit (NPI)	2,417	2.1	3.8	4.4	7.4	82.2
<b>Employers</b>						
For profit	667	43.2	26.7	16.0	9.6	4.5
Not for profit (NPI)	57	40.4	24.6	14.0	10.5	10.5

Source: Statistics Canada, Workplace and Employee Survey, 2003

of volunteers, and many were concerned about their over-dependence on a small core of volunteers (Hall 2003). And many of these volunteers work for more than one organization, helping to deliver programs, fundraising, campaigning or serving as board members.

**Chart A The non-profit sector relies heavily on frequent volunteers**



1 Data for board members and volunteers in business and government are not available in the sources.

2 Data for government contractors are not available in the source (Labour Force Survey).

Sources: Statistics Canada, Labour Force Survey; National Survey of Non-profit and Voluntary Organizations; Workplace and Employee Survey, 2003



NPIs also seem to rely much more on part-time employees. Thus, among the three sectors, NPIs are least reliant on full-time employees. And, NPIs use contractors much less than business. The data source for government does not allow measurement of its reliance on contractors, but the percentage is also probably much less than 1%. The full-time equivalent (FTE) distribution of labour in NPIs is 36% volunteers and 64% employees and contractors (Table 2). In the business sector, volunteers are probably less than 1% of the workforce.

### Labour inputs to the non-profit sector

The use of different forms of labour input among NPIs is influenced by the type of organization (based on major field of activity and outputs), geographic location, and size and age of the organization, among other factors. Full-time employees are the most common labour input for the non-profit sector as a whole (46% of total FTEs), followed by frequent volunteers at 28% (Table 3). The FTE contribution from part-time employees amounts to 16%. The contributions of board members and infrequent volunteers are similar (around 5%), while contractors add just 1%.<sup>4</sup>

FTEs arising from frequent volunteers vastly outnumber those attributable to infrequent ones. Of the total volunteer FTEs, 77% are attributable to frequent volunteers. The shares for infrequent volunteers and board members are 15% and 8% respectively.

Of the total FTEs from employees and contractors, the contribution of full-time employees is of pre-eminent importance, as expected. Full-time employees contribute 72% of the FTEs arising from paid employees. Part-time employees make a much larger contribution than contractors.

### Labour input in quasi-governmental and core non-profit organizations

Within the non-profit sector, a major division exists between organizations that deliver health and educational services largely funded by taxes and borrowing, and organizations more heavily reliant on revenues from non-government sources. Sales are the largest revenue source for the latter group of NPIs (Nouroz and Stone 2007, Table 1). (The literature refers to these two classes as 'quasi-governmental' and 'core' NPI organizations.)

The labour profiles of core non-profit and quasi-governmental organizations are distinct (Chart B). Core non-profits rely much more on volunteers. Just less than half of their aggregate FTEs arise from volunteers. In contrast, quasi-governmental organizations derive around one-sixth of aggregate FTEs from volunteers and over 80% from employees. The greater reliance of core NPIs on volunteers also applies to FTEs contributed by board members—about 4% of total FTEs in core NPIs versus 1% in quasi-governmental NPIs.

Another aspect of the greater use of volunteers by core NPIs is their heavy reliance on frequent volunteers. Almost 40% of their total FTEs are attributable to frequent volunteers, more than twice that for quasi-governmental NPIs. In core NPIs, close to 10% of total FTEs arise from infrequent volunteers, compared with well below 5% among their quasi-governmental

**Table 2 Aggregate FTEs supplied to non-profit organizations**

	Organizations	Volunteers	Paid labour
			%
<b>Total</b>	<b>12,682</b>	<b>36</b>	<b>64</b>
<b>Quasi-governmental</b>	<b>1,484</b>	<b>15</b>	<b>85</b>
Education and research	779	26	74
Health and hospitals	705	10	90
<b>Core NPI</b>	<b>11,198</b>	<b>48</b>	<b>52</b>
Arts and culture	1,369	38	62
Environment	471	70	30
Grant-making, fundraising and voluntarism promotion	1,427	77	23
Housing and development	658	8	92
International	150	65	35
Law and advocacy	411	58	42
Professional associations	963	32	68
Religion	1,527	53	47
Social services	1,783	40	60
Sports and recreation	2,439	73	27

Source: Statistics Canada, National Survey of Non-profit and Voluntary Organizations, 2003

**Table 3 FTEs by type of labour input for non-profit organizations**

	Volunteers		Board members	Employees		Contractors	
	Frequent	Infrequent		Full-time	Part-time	Full-time	Part-time
	%						
Total	28	5	3	46	16	1	0
Quasi-governmental	13	2	1	59	25	1	0
Education and research	22	2	1	49	24	2	0
Health and hospitals	8	2	1	64	25	1	0
Core NPI	36	8	4	39	11	2	0
Arts and culture	25	8	5	39	13	9	1
Environment	50	17	4	25	3	1	0
Grant-making, fundraising and voluntarism promotion	53	18	6	17	5	1	0
Housing and development	4	1	2	87	4	1	0
International	53	8	4	29	3	2	0
Law and advocacy	42	10	7	32	7	2	0
Professional associations	25	4	3	39	28	1	0
Religion	41	6	6	37	9	1	0
Social services	29	9	2	44	15	2	0
Sports and recreation	61	8	4	18	8	1	0

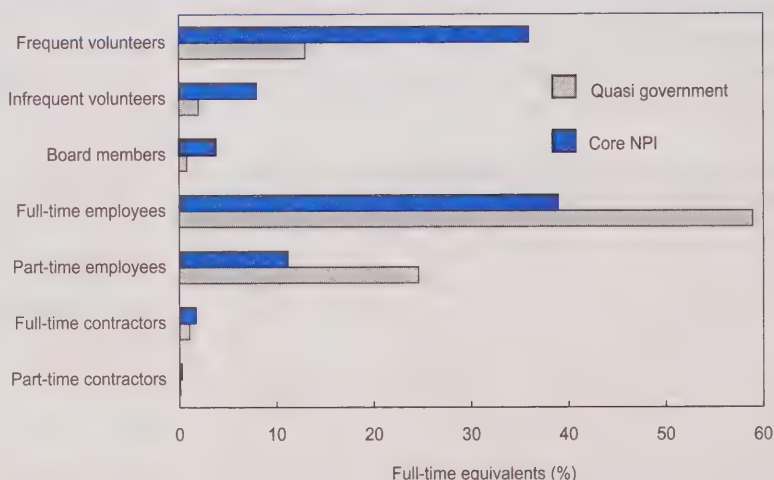
Source: Statistics Canada, National Survey of Non-profit and Voluntary Organizations, 2003; estimates developed by authors

counterparts. The ratio of infrequent to frequent volunteers is also greater for core NPIs.

The greater reliance of quasi-governmental NPIs on employees is true for both full-time and part-time employees—accounting for 59% and 25% of FTEs respectively. In contrast, among core NPIs, the corresponding shares are 39% and 11%. In both kinds of NPI organizations, full-time contractors contribute at most 2% of total FTEs.

### Variations within the two classes of NPIs

Among quasi-governmental health organizations and hospitals, the ratio of employees to volunteers is much higher than in education and

**Chart B Quasi-governmental non-profit organizations are much more reliant on paid employees**

Source: Statistics Canada, National Survey of Non-profit and Voluntary Organizations, 2003



research (Chart C). The ratio of full- to part-time employees is also higher. In consequence, education and research rely more on frequent volunteers.

The greatest reliance on frequent volunteers is found in the sports and recreation group. This is closely followed by international, fundraising and voluntarism promotion, environment, religion, and law and advocacy. Distinctly lower reliance is found in the remaining four groups of core NPIs.

The greatest reliance on infrequent volunteers is found in the fundraising and voluntarism promotion, and environment groups—over 15% of aggregate FTEs. The least reliance is found among housing, religion and professional associations.

Core NPIs can also be compared in terms of the degree of balance between the major sources of labour inputs. Social service has the closest to equal weight for infrequent volunteers, frequent volunteers, full-time employees, and part-time employees in its total FTEs. Next are professional associations, and arts and culture. Professional associations are also notable in having the greatest reliance on part-time employees.

The proportion of FTEs accounted for by board members varies widely among the NPIs. At the top of the ranking are religion; law and advocacy; arts and culture; and fundraising and voluntarism promotion. At the bottom are social services, housing and development, professional associations, environment, international, and sports and recreation.

## Summary

Non-profit organizations have a greater-than-average reliance on part-time employees, and especially on volunteers. They rely more on part-time employees than either government or business, and they use contractors much less than does business. However, full-time employees and frequent volunteers are the most common labour inputs for the non-profit sector as a whole—the heavy reliance on full-time employees arises largely from health and educational organizations (the quasi-governmental subsector).

The greatest reliance on frequent volunteers is in sports and recreation; international; fundraising and voluntarism promotion; and environment. At the other extreme, housing and development relies very little on volunteers of any kind.

Infrequent volunteers are much more likely to be found in core NPIs than in the quasi-governmental ones. The highest percentages for infrequent volunteers are in the fundraising and voluntarism promotion, and the environment groups.

The social services group had the closest approach to equal weight among infrequent volunteers, frequent volunteers, full-time employees and part-time employees. Professional associations and arts and culture followed, but were well behind.

Boards of directors can be expected to contribute very small shares of total FTEs to organizations, but the percentage varies widely among core NPIs. At the top are religion; law and advocacy; fundraising and voluntarism promotion; and arts and culture.

External changes, such as decreased funding for hiring paid staff, fewer volunteers in general, or shortages of certain kinds of volunteers are among the factors that have preoccupied NPI leaders (Hall et al. 2003; McMullen and Schellenberg 2003). An immediate concern in the presence of such changes is to monitor their consequences for the overall structure (or profile) of the labour supply to help pinpoint key vulnerabilities and review possible adjustments.

Its profile of labour inputs may be a key aspect of an organization's resilience and adaptability (McMullen and Brisbois 2003). While the size and stability of revenues are critical, the mix of human resources available to the organization (even after taking size and funding into account) is also important.

Despite the many advantages of largeness, size and adaptability may not be meaningfully correlated (very large size may inhibit adaptability). At more modest sizes, the exposure of paid staff or volunteers to a variety of other kinds of co-workers may be a powerful factor in promoting adaptability—thus the need to analyze the linkages between organizational adaptability and resilience and the composition of total human resources.

A large segment of the workforce wants part-time employment—and this may become more prevalent as baby boomers phasing into retirement seek to remain connected to the labour market to some degree. This development would provide an opportunity for NPIs to strengthen their performance through greater reliance on paid part-time employees

**Chart C The use of human resources (based on FTEs) varies considerably among non-profit organizations**





**Chart C The use of human resources (based on FTEs) varies considerably among non-profit organizations (concluded)**



Source: Statistics Canada, National Survey of Non-profit and Voluntary Organizations, 2003

with much labour-market experience, assuming the necessary financing is available. However, they will be competing with businesses that also seek to use part-timers more intensively. In getting ready to meet this competition, NPI leaders would do well to pay increased attention to analyzing the composition of their human-resource inputs.

### Perspectives

#### ■ Notes

- 1 This is based on the International Classification of Non-profit Organizations, as modified by Hall et al. 2004.
- 2 It is important to keep in mind that the reference here is to paid workers. A very different picture emerges when the volunteer workforce is taken into account.
- 3 The sources used for this paper provide no information about volunteers in businesses and government. The number of volunteers in these sectors may exceed 100,000 in one year; however the relative size of their labour input to government and to businesses would need to be measured in terms of a standard unit such as the FTE.
- 4 Frequent volunteers contribute their time more than twice a year; infrequent volunteers only once or twice a year. These volunteers have been termed 'systematic' and 'occasional' respectively by Brunnetti and Moreschi (2000). In the NSNVO, board members are separated from other kinds of volunteers, and this separation is maintained here.

#### ■ References

- Benimadhu, Prem. 2006. "HR chief moves to centre stage at companies." *National Post (Financial Post)*. February 1, 2006. FP Working. [http://www.conferenceboard.ca/press/2006/OpEds/060203\\_HR\\_Centre\\_Stage\\_OpEd.asp](http://www.conferenceboard.ca/press/2006/OpEds/060203_HR_Centre_Stage_OpEd.asp).
- Brunetti, Margherita and Barbara Moreschi. 2000. *Toward an Estimation of the Employment Produced by Italian Voluntary Organizations*. International Society for Third-Sector Research. Fourth International Conference. Dublin. July 5–8.
- Hall, Michael H., Alison Andrukow, Cathy Barr, Kathy Brock, Margaret de Wit, Don Embuldeniya, Louis Jolin, David Lasby, Benoît Lévesque, Eli Malinsky, Susan Stowe and Yves Vaillancourt. 2003. *The Capacity to Serve: A Qualitative Study of the Challenges Facing Canada's Nonprofit and Voluntary Organizations*. Toronto. Canadian Centre for Philanthropy. 101 p.
- Hall, Michael H., Margaret L. de Wit, David Lasby, David McIver, Terry Evers, Chris Johnston, Julie McAuley, Katherine Scott, Guy Cucumel, Louis Jolin, Richard Nicol, Loleen Berdahl, Bob Roach, Ian Davies, Penelope Rowe, Sid Frankel, Kathy Brock and Vic Murray. 2004. *Cornerstones of Community: Highlights of the National Survey of Nonprofit and Voluntary Organizations*. Statistics Canada Catalogue no. 61-533-XIE. Ottawa. 79 p. <http://www.statcan.ca/english/freepub/61-533-XIE/61-533-XIE2004001.pdf> (accessed June 18, 2007).
- Hamdad, Malika, M. Hoffarth and Sophie Joyal. 2006. *Satellite Accounts of Nonprofit Institutions and Volunteering*. Statistics Canada Catalogue no. 13-015-XIE. Ottawa.
- McMullen, Kathryn and Richard Brisbois. 2003. *Coping with Change: Human Resource Management in Canada's Non-profit Sector*. Ottawa. Canadian Policy Research Networks. CPRN Research Series on Human Resources in the Non-profit Sector, no. 4. 75 p.
- McMullen, Kathryn and Grant Schellenberg. 2003. *Job Quality in Non-profit Organizations*. Ottawa. Canadian Policy Research Networks. CPRN Research Series on Human Resources in the Non-profit Sector, no. 2. 60 p.
- Nouroz, Hasheem and Leroy O. Stone. 2007. *The Structure of Labour Inputs to Non-Profit Organizations in Canada*. Unpublished background paper, Unpaid Work Analysis Division, Statistics Canada.

Special thanks are due to Harpreet Kaur Randhawa for her extensive technical support in the project in the Unpaid Work Analysis Division from which this paper is derived. The authors would also like to thank Henry Pold, Ted Wannell, Malika Hammad and peer reviewers for their advice and other help.



# Trends and seasonality in absenteeism

Ernest B. Akyeampong

**E**mployee absences from work because of an illness or disability are of constant interest. These absences can be for either part or all of a week (see *Data sources and definitions*).<sup>1</sup> Past studies have examined in detail trends and differences among various work groups with respect to overall illness-related work absences—full- and part-week combined. (Akyeampong 1988, 1992, 1995, 1999).<sup>2</sup> Until now, no work has been done on the two separately, even though part-week absences are more likely to be unannounced and so may be relatively more disruptive to managers for planning and production purposes, and to co-workers. This note examines not only separate trends for the two types of absences, but also their seasonality over the decade 1997 to 2006—namely, since the latest Labour Force Survey redesign.

## Rising trend in part-week absences during past decade

The weekly number of employees failing to report for work because of an illness or disability has increased steadily over the past 10 years—from 431,000 in 1997 to 758,000 in 2006. Controlling for employment growth does not change the picture (Table and Chart A); the incidence rose consistently, climbing from 3.8% in 1997 to 5.4% in 2006. Contributing factors include the aging of the workforce and improvements in sick-leave entitlements.<sup>3</sup>

The trend for each type of illness-related absence has been generally upward, but much more pronounced for part-week absences. For example, while the number of employees reporting a full-week absence rose by almost one-third (from 199,000 in 1997 to 262,000 in 2006), part-week absences more than doubled (from 232,000 to 496,000). Similarly, the incidence

*Ernest B. Akyeampong retired from the Labour and Household Surveys Analysis Division. For further information, contact Henry Pold at 613-951-4608 or [henry.pold@statcan.ca](mailto:henry.pold@statcan.ca).*

## Data source and definitions

The **Labour Force Survey** collects information each month on labour market activity during the survey reference week from the civilian, non-institutionalized population 15 years of age and over. The territories are excluded from the national total, as are persons living on Indian reserves. The survey samples approximately 53,000 households, with each remaining in the sample for six consecutive months.

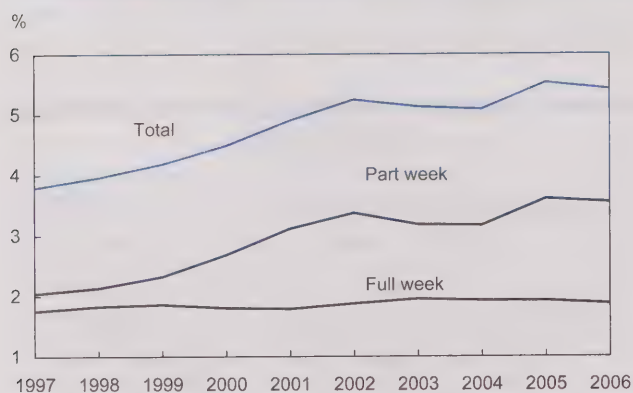
Among other things, the Labour Force Survey asks respondents if they were absent from work during the reference week, and if so the reason for the absence. If they reported an absence because of their own illness or disability, they are further asked the hours they missed as a result. The full-week and part-week absence designations are assigned by comparing usual weekly hours with hours lost as a result of the illness or disability.

To simplify the analysis, seasonality in this note is based on the four seasons, rather than each month—Winter (December to February), Spring (March to May), Summer (June to August), and Fall (September to November). The seasonal index was constructed with the annual average data being 1.00.

**Table Employees absent from work each week due to own illness or disability**

	Total		Full week		Part week	
	'000	%	'000	%	'000	%
1997	430.7	3.8	199.0	1.8	231.8	2.0
1998	461.4	4.0	212.9	1.8	248.5	2.1
1999	501.0	4.2	222.7	1.9	278.3	2.3
2000	555.9	4.5	223.5	1.8	332.4	2.7
2001	620.9	4.9	226.4	1.8	394.5	3.1
2002	681.9	5.2	243.6	1.9	438.3	3.4
2003	680.9	5.1	258.9	2.0	422.1	3.2
2004	686.5	5.1	259.5	1.9	427.0	3.2
2005	754.8	5.5	262.5	1.9	492.3	3.6
2006	757.9	5.4	261.8	1.9	496.1	3.5

Source: Statistics Canada, Labour Force Survey

**Chart A Part-week absences increased by about half; full-week, virtually flat**

Source: Statistics Canada, Labour Force Survey

of full-week absences rose marginally from 1.8% to 1.9% between 1997 and 2006, while that of part-week absences jumped from 2.0% to 3.5%. Simply stated, part-week absences have been the major driving force for the increase in overall work absences due to illness or disability during the past decade. Throughout the period, women showed a higher incidence of both full- and part-week illness-related absences than men (Chart B). For both women and men, though, the incidence of full-week absences remained little changed over the period, while that of part-week absences rose rapidly.

## Seasonality a factor in part-week absences

Perhaps not unexpectedly, illness-related absences are highly seasonal, reaching a peak during the winter months (December to February) and a trough during the summer (June to August) (Chart C). The high incidence in winter is likely related to the prevalence of communicable diseases at that time, especially colds and influenza. The low incidence during the summer may be partly because many employees take their vacation during these months. Because of survey design, those who fall ill during vacation will likely report 'vacation' rather than 'sickness or disability' as the main reason for being away from work.

Compared with the annual average, part-week absences are roughly 30% more prevalent in the winter months and almost 20% less so during the summer months. Seasonality is much less evident in full-week absences.

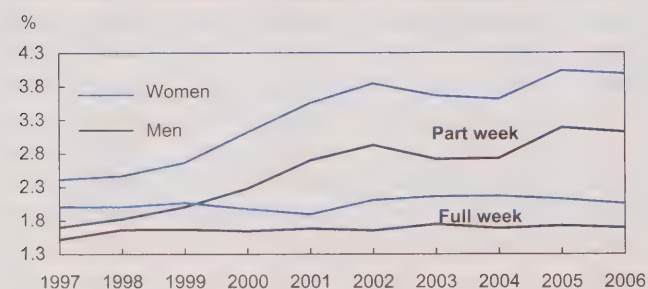
## Hours lost per absence remains steady

Hours lost for full-week illness absences by definition reflect average usual hours worked—about 37 between 1997 and 2006. Similarly, time lost for part-week absences has been concentrated around 11 hours (roughly a day and a half).

## Summary

The number and proportion of employees absent from work for all or part of a week due to own illness or disability have risen over the past 10 years. The growth has been much greater for part-week absences. The number of employees absent for a full week rose from 199,000 in 1997 to 262,000 in 2006, and the incidence grew slightly from 1.8% to 1.9%. The corresponding increases for part-week absences were from 232,000 to 496,000, and from 2.0% to 3.5%.

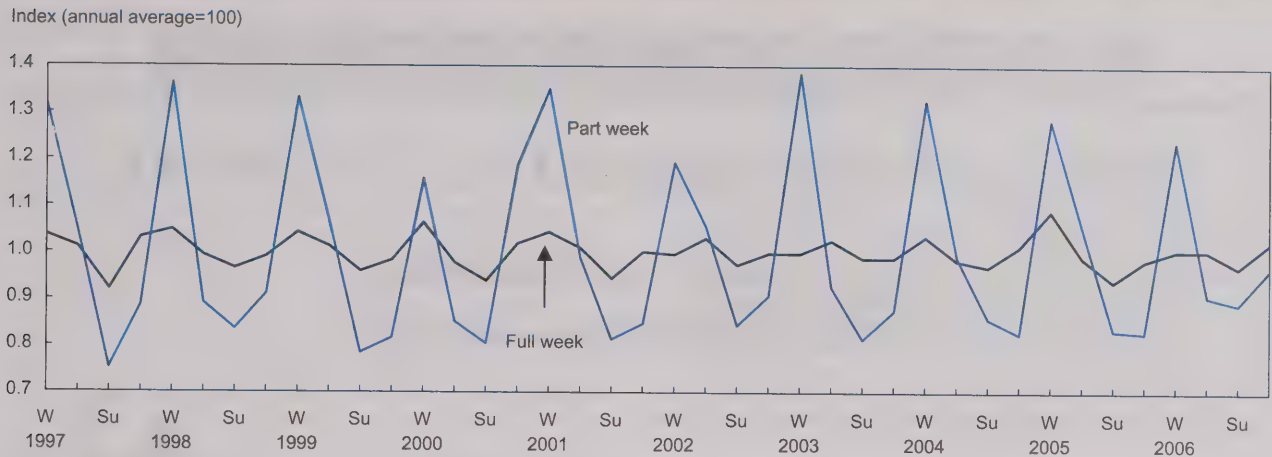
Both men and women shared in the rising incidence, with rates for both full-week and part-week absences being higher for women. Reasons for the growing trends in both number and incidence include the aging of the workforce and improvements in sick-leave entitlements for employees. While full-week absences have shown minimal seasonal patterns, the same cannot be said for part-week absences. Compared with the annual average, part-week illness absences are roughly 30% more common in the winter months and 20% less so in the summer months.

**Chart B Whether full- or part-week, women's absence rates are higher**

Source: Statistics Canada, Labour Force Survey



**Chart C** Illness-related absences tend to be at their peak during winter (W) months and at their trough in summer (Su) months



Source: Statistics Canada, Labour Force Survey

## ■ Notes

1 Whether an illness-related absence is designated as full- or part-week is dictated by the Labour Force Survey design. The survey results are based on labour market activity during a reference week, usually the week containing the 15th day of the month. As well, absences are snapshots within the reference week and do not necessarily mean completed spells of absence. Such information can only be obtained from a longitudinal survey such as the Survey of Labour and Income Dynamics.

2 In these previous studies, the focus of interest was absenteeism, and hence, in accordance with international practices, part-time employees, who normally have low absence rates, were excluded from the analyses. In this note however, the universe includes both full-time and part-time workers.

3 Studies have found that illness-related work absences increase with age (Statistics Canada 2007).

## ■ References

- Akyeampong, Ernest B. 1988. "Time loss from work for personal reasons." *The Labour Force*. Vol. 44, no. 5. May. Statistics Canada Catalogue no. 75-001-XPB. p. 87-121.
- . 1992. "Absences from work revisited." *Perspectives on Labour and Income*. Vol. 4, no. 1. Spring. Statistics Canada Catalogue no. 75-001-XPE. p. 44-53.
- . 1995. "Missing work." *Perspectives on Labour and Income*. Vol. 7, no. 1. Spring. Statistics Canada Catalogue no. 75-001-XPE. p. 12-16.
- . 1999. "Missing work in 1998—industry differences." *Perspectives on Labour and Income*. Vol. 11, no. 3. Autumn. Statistics Canada Catalogue no. 75-001-XPE. p. 30-36.
- Statistics Canada. 2007. *Work Absence Rates, 2006*. Statistics Canada Catalogue no. 71-211-XWE. Ottawa. <http://www.statcan.ca/english/freepub/71-211-XIE/71-211-XIE2007000.htm> (accessed June 13, 2007).

# PERSPECTIVES

ON LABOUR AND INCOME

## THE COMPREHENSIVE JOURNAL

on labour and income  
from Statistics Canada

- ☐ Yes, I want PERSPECTIVES ON LABOUR AND INCOME  
(Catalogue no. 75-001-XPE).

Subscribe to Perspectives on Labour and Income today!

Save  
by extending your  
subscription!

Save 20%  
by subscribing for 2 years!  
Only \$100.80 (plus taxes)

Save 30%  
by subscribing for 3 years!  
Only \$132.30  
(plus taxes)



### MAIL

Statistics Canada  
Finance Division  
100 Tunney's Pasture  
Driveway, 6th floor  
Ottawa, Ontario  
Canada K1A 0T6



### PHONE

1 800 267-6677

Quote PF027090



### FAX

1 877 287-436  
613-951-0581



### E-MAIL

Infostats@statcan.ca

### METHOD OF PAYMENT (Check only one)

Charge to my: ☐ MasterCard ☐ VISA ☐ American Express

Card Number

Expiry Date

Authorized Signature

Cardholder (Please print)

☐ Payment Enclosed \$

Authorized Signature

Name

Company

Department

Address

City

Province

Postal Code

Phone

Fax

E-Mail address

Catalogue No.

Title

75-001-XPE

Perspectives on Labour and Income

No shipping charges for delivery in Canada. Outside Canada, please add shipping charges as indicated. Canadian clients add either 6% GST and applicable PST or HST (GST Registration No. R121491807). Clients outside Canada pay in Canadian dollars drawn on a Canadian bank or pay in equivalent US dollars, converted at the prevailing daily exchange rate, drawn on a US bank. Federal government departments must include with all orders their IS Organization Code and IS Reference Code.

Your personal information is protected by the Privacy Act. Statistics Canada will use your information only to complete this sales transaction, deliver your product(s), announce product updates and administer your account. From time to time, we may also offer you other Statistics Canada products and services or ask you to participate in our market research.

If you do not wish to be contacted again for promotional purposes ☐ and/or market research ☐, check as appropriate.

Subscription	Price (CDN \$)	Quantity	Total CDN \$
1 year	63.00		
2 years	100.80		
3 years	132.30		
Subtotal			
Applicable GST (6%)			
Applicable PST			
Applicable HST (N.S., N.B., N.L.)			
Shipping charges U.S. CDN \$24, other countries CDN \$40			
Grand Total			

ORDER FORM



Statistics Canada  
Statistique Canada

Canada



# Working at home: An update

Ernest B. Akyeampong

Various Statistics Canada surveys have suggested strong growth in the number and proportion of employees doing some or all of their regularly scheduled work at home during the 1990s.<sup>1</sup> The estimated number (and incidence) of teleworkers rose from just a little over 600,000 (6%) in 1991 to 1 million (9%) in 1995, and to 1.4 million (10%) in 2000. With continuing growth in employment, growing computer use both at home and at work, advancements in information and telecommunications technology, and lobbying by telework advocacy groups, one would have expected the trend to continue into the 2000s.<sup>2</sup> Instead, virtually no increase has been seen. This note uses the 2000 and 2005 General Social Survey (see *Data source*) to examine changes in telework by sex, age, education, occupation, industry, and marital status. The focus is on employees because the self-employed have relatively more freedom with respect to workplace location. However, the decision to allow a telework arrangement rests on negotiations between employee and employer (see *Main reason for working at home*).

## Stall in telework numbers and incidence

The number and incidence of teleworkers appear to have levelled off in recent years—actually dipping from 1,426,000 (10.2%) in 2000 to 1,322,000 (9.8%) in 2005 (Table). The stall is surprising in light of past trends (see *Possible impediments to telework growth*).

With few exceptions, the fall-off in telework popularity between 2000 and 2005 was pervasive. It occurred for male and female employees alike, irrespective of marital status. However, employees aged 55 and over recorded a rise in incidence over the period, as did those without a high school diploma, and those with some college or university education but no diploma or degree.

## Data source

The information in this update is from the 2000 and 2005 **General Social Survey**. In 2000, a representative sample of 25,000 non-institutional respondents aged 15 and over in all provinces were surveyed about their use of computers and the Internet. Data were collected over 12 months from January to December 2000. In 2005, 20,000 respondents used a 24-hour diary to record the time they spent on various activities.

In most major industries, the incidence remained little changed or declined slightly. Notable declines occurred in business, building and other support, and in public administration.<sup>3</sup> In both 2000 and 2005, employees in professional, scientific and technical services, and in educational services recorded the highest incidence of telework—roughly one-quarter. Manufacturing had one of the lowest rates (about 6% in 2005).

The incidence in most of the major occupational groups also remained about the same or declined slightly. Just as in 2000, employees in social sciences and education had the highest incidence in 2005 (29%). Sales and service occupations registered a low incidence (6%).

## Main reason for working at home

When employees in 2005 were asked the main reason for working at home, approximately a quarter said it was a requirement of the job, one-fifth said conditions were better at home, one-sixth said the arrangement helped save money, and one-twelfth said it helped them in caring for children and other family members and in meeting personal obligations.

Ernest Akyeampong retired from the Labour and Household Surveys Analysis Division. For further information, contact Henry Pold at 613-951-4608 or [henry.pold@statcan.ca](mailto:henry.pold@statcan.ca).

Table People working from home, by selected characteristics

	Employees				Self-employed			
	2000		2005		2000		2005	
	'000	%	'000	%	'000	%	'000	%
<b>Both sexes</b>	<b>1,426</b>	<b>10.2</b>	<b>1,322</b>	<b>9.8</b>	<b>1,369</b>	<b>49.5</b>	<b>1,554</b>	<b>54.6</b>
Men	782	10.5	744	10.5	826	45.9	949	51.1
Women	644	9.8	578	9.1	544	56.2	605	61.3
<b>Age</b>								
15 to 24	137	4.6	120	4.9	60	42.3	44 <sup>E</sup>	30.3 <sup>E</sup>
25 to 54	1,174	11.9	1,025	10.8	1,046	50.0	1,141	56.5
55 and over	114	9.8	177	11.7	263	49.3	368	54.2
<b>Education</b>								
Some high school or less	86	3.9	78	4.8	166	37.9	125	37.2
High school diploma	147	5.5	121	5.2	202	42.1	174	43.8
Some postsecondary	189	7.9	191	8.7	204	52.6	232	56.3
Diploma or certificate	347	9.3	254	6.8	368	53.3	478	59.2
Bachelor's degree or more	655	22.6	674	18.9	426	56.3	540	61.9
<b>Marital status</b>								
Married, common-law	1,009	12.1	968	11.7	1,065	50.7	1,212	55.3
Separated, divorced, widowed	99	9.8	108	9.9	119	56.1	130	56.3
Single (never married)	304	7.0	247	6.1	159	39.8	212	50.1
<b>Industry</b>								
Agriculture	F	F	26 <sup>E</sup>	24.1 <sup>E</sup>	166	65.0	151	66.5
Forestry, fishing, mining, oil and gas	28	9.6	34 <sup>E</sup>	12.3 <sup>E</sup>	27	35.5	19 <sup>E</sup>	45.2 <sup>E</sup>
Utilities	F	F	16 <sup>E</sup>	12.7 <sup>E</sup>	F	F	F	F
Construction	44	7.0	39 <sup>E</sup>	5.8 <sup>E</sup>	114	41.6	136	42.8
Manufacturing	164	7.4	99	5.8	70	47.2	61	44.9
Trade	149	7.1	162	7.8	141	43.1	156	49.7
Transportation and warehousing	50	8.2	41 <sup>E</sup>	6.5 <sup>E</sup>	36	22.8	32 <sup>E</sup>	26.7 <sup>E</sup>
Finance, insurance, real estate and leasing	107	14.0	90	11.3	105	61.9	164	67.8
Professional, scientific and technical	155	22.9	174	21.9	244	68.7	285	66.4
Business, building and other support	44	11.0	19 <sup>E</sup>	4.5 <sup>E</sup>	68	37.4	70	40.5
Educational services	242	23.4	239	23.2	33	53.7	44	63.8
Health care and social assistance	107	8.6	125	8.7	127	63.2	137	57.3
Information, culture and recreation	90	12.9	92	13.7	87	64.2	120	69.4
Accommodation and food services	36	3.6	22 <sup>E</sup>	2.4 <sup>E</sup>	35	36.1	36 <sup>E</sup>	41.4 <sup>E</sup>
Other services	62	12.9	69	13.4	77	35.1	94	46.5
Public administration	95	10.5	66 <sup>E</sup>	7.5 <sup>E</sup>	F	F	F	F
<b>Occupation</b>								
Management	229	25.4	196	19.8	222	43.6	155	40.7
Business, finance and administrative	301	11.7	234	9.2	191	64.7	272	72.3
Natural and applied sciences	175	18.4	150	14.6	99	64.5	101	57.1
Health	28	4.5	35 <sup>E</sup>	4.5 <sup>E</sup>	40	39.2	55	42.3
Social science, education	271	26.4	305	28.5	76	70.0	83	58.9
Art, culture, recreation and sport	52	16.5	60 <sup>E</sup>	16.1 <sup>E</sup>	134	65.4	184	70.2
Sales and service	220	6.1	211	6.2	246	48.7	337	55.4
Trades, transport and equipment operators	74	4.0	64 <sup>E</sup>	3.7 <sup>E</sup>	110	29.7	127	34.3
Unique to primary industry	20	5.4	35 <sup>E</sup>	13.2 <sup>E</sup>	182	54.4	169	61.9
Unique to processing, manufacturing and utilities	35	2.9	23 <sup>E</sup>	2.6 <sup>E</sup>	32	38.8	36 <sup>E</sup>	54.5 <sup>E</sup>

Source: Statistics Canada, General Social Survey



### Possible impediments to telework growth

Several things could account for the stall in telework growth. An obvious possibility is that continuing re-evaluation of the advantages and disadvantages of telework may have lowered its attractiveness for both employees and employers (see *The pros and cons of working at home*). For example, growth in employer-assisted day-care programs (including on-site day-care centres) and improved transportation networks may have helped reduce the need to work at home. Also, the growing need for greater information security, especially after 9/11, as well as for closer communication among workers may make telework less desirable for employers. Another possibility is continuing advancements in information technology. The use of laptops, BlackBerries and mobile phones, and the growing proliferation of communication centres may facilitate work from many other places, such as cars, airports, railway and bus terminals, and satellite offices.

### Teleworkers put in relatively few hours at home

The majority of teleworkers put in just a few hours of work (10 or less) at home each week, but the proportion doing so in 2005 was higher than in 2000 (71% versus 65%). In both years, only 3% of teleworkers put in over 40 hours. The average in 2005 was 17 hours.

### Summary

Contrary to expectation, the strong growth in telework during the 1990s was not sustained in the 2000s. Indeed, the number of employees doing some or all of their regularly scheduled work at home stalled at 1.3 to 1.4 million. The overall incidence remained unchanged at about 10%. The reasons for the stall, which was widespread, are unclear. It could have been partly caused by employees and employers re-evaluating the advantages, disadvantages and effectiveness of this type of work arrangement. In addition, continuing developments in information and telecommunications technology now permit many employees to work effectively from many places other than home.

### Perspectives

### Pros and cons of working at home

Working at home has both advantages and disadvantages. For the employee, this arrangement allows more flexibility to schedule activities; makes it easier to balance work and personal or family demands; reduces expenses for transportation, clothing and food; and cuts commuting time. On the negative side, working at home may reduce one's social circle, stifle career advancement, or even increase workload.

For the employer, a work-from-home arrangement may increase employee productivity, reduce expenses for work space, improve recruitment and retention of employees, and reduce absenteeism. Among the most commonly cited disadvantages are problems related to co-ordination and communication, lack of control over quality of work, and problems associated with information security.

### ■ Notes

1 Estimates of the number of people working at home date back to the 1971 Census. Since then, the Survey of Work Arrangements (SWA), the Survey of Labour and Income Dynamics, the General Social Survey (GSS), and the Workplace and Employee Survey have all collected data on the subject. However, these surveys differ in question wording, reference period, and sample design. Indeed, for some surveys, such as the census, the questions were not identical in all years. As a result, no consistent time series exist, making it impossible to be precise on trends over the past three decades. Nevertheless, the SWA 1991 and 1995, and the GSS 2000 and 2005 are fairly comparable (see Akyeampong and Nadwodny 2001 for questions and estimates from the various surveys).

2 Among the better-known telework advocacy groups are the Canadian Telework Association, a non-profit, telework-promoting organization, and Innovations Canada, a telework and flexible-work consulting organization.

3 The decline of telework in public administration is particularly puzzling, since the federal Treasury Board actively supported this type of work arrangement in a policy statement dated December 6, 1999.

### ■ Reference

Akyeampong, Ernest B. and Richard Nadwodny. 2001. "Evolution of the Canadian workplace: Work from home." *Perspectives on Labour and Income*. Vol 13. no. 4. Winter. Statistics Canada Catalogue no. 75-001-XPE. p. 30-36.



# CANADIAN ECONOMIC Observer

Statistics Canada's **Canadian Economic Observer (CEO)** delivers the most thorough, monthly economic briefing available. Each month as a subscriber you receive current and reliable information to help you stay abreast of the economic performance of the country, your province and the specific economic sectors in which you're interested.

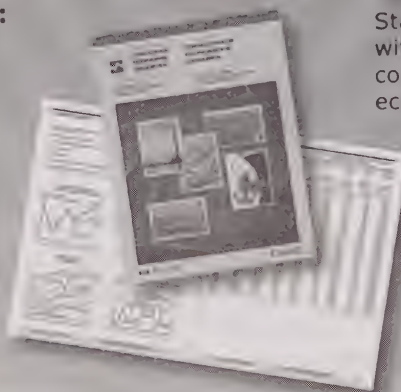
**CEO is presented in two parts:**

## CEO-The Magazine

- Sector-by-sector analysis of economic indicators
- Developments in provincial and international economies
- Highlights of economic events in Canada and around the world
- A summary table of current economic conditions
- Feature articles spotlighting major issues and industry sectors

## CEO-The Statistical Summary

- Detailed figures in tabular form on markets, prices, industrial sectors, international and domestic trade, and much more
- More than 1,100 economic indicators covering: market sectors, imports, exports, demographics, unemployment, and much more
- User-friendly tables and graphs



## What's in a typical issue?

Statistical charts and tables are blended with expert commentary to provide a quick, concise, wide-ranging overview of the economy.

## NEW - CEO now available in an electronic format!

Enjoy the complete print edition in an electronic format (PDF) for 25% less than the cost of the print version. Subscribing to the electronic format also gives you access to our archives of articles. Visit our website at [www.statcan.ca](http://www.statcan.ca) to download it today!

## Your annual subscription to the CEO print version includes:

- **12 issues of Canadian Economic Observer**, your source for the latest trends, analyses and data on Canada's economy.
- **A FREE edition of CEO's Annual Historical Supplement**—a fact-filled compendium, putting at your fingertips the economic trends that have characterized Canada's development from as far back as 1926 right up to the present... all in one easy-to-use volume.

## Subscribe to the Canadian Economic Observer

Canadian Economic Observer (Cat. No. 11-010-XPB)

**Order** 1 year subscription: \$243.00

**Order** 2 year subscription: \$388.80 **Save 20%**

**Order** 3 year subscription: \$510.30 **Save 30%**

In Canada, please add **either** GST and applicable PST **or** HST. Print version: no shipping charges for delivery in Canada. For shipments to the United States, please add \$6 per issue or item ordered. For shipments to other countries, please add \$10 per issue or item ordered. (Federal government clients must indicate their IS Organization Code and IS Reference Code on all orders.)

## Use one of four convenient ways to order:

**CALL** Toll-free 1 800 267-6677

**FAX** Toll-free 1 877 287-4369

**MAIL** Statistics Canada, Finance,  
6-H, R.H. Coats Building, Tunney's Pasture,  
Ottawa, Ontario K1A 0T6

**E-MAIL** [infostats@statcan.ca](mailto:infostats@statcan.ca)

[www.statcan.ca](http://www.statcan.ca)

Visit our website



# Life after high tech

Marc Frenette

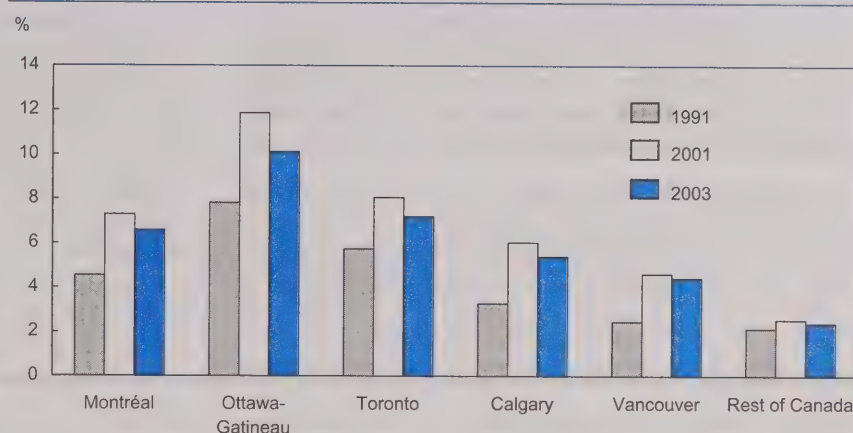
The leading role of the high-tech sector<sup>1</sup> in the economic recovery of the second half of the 1990s has been well documented. In 1991, this sector accounted for 3.2% of employees. During the 1990s, it expanded at a greater rate than the rest of the economy, eventually representing 4.5% of the workforce in 2000. Much of the increase was fuelled by explosive growth in the high-tech sector in Ottawa-Gatineau. Prior to the boom, this area led the country with 7.8% of its workforce employed in the high-tech sector, but this jumped to 11.8% by 2000 (Chart A).

As demand for workers increased, so too did real earnings. Between 1991 and 2000, average earnings in the industry rose from \$48,000 to \$58,900 (2003 dollars) while those in the rest of the economy grew at a much slower pace. Ottawa-Gatineau showed dramatic increases—from \$54,500 to \$77,000 (Chart B).

Then came the meltdown in 2001 with its headlines of large-scale layoffs. But what was the statistical evidence of the downturn and how it affected employment numbers and average earnings in the sector?<sup>2</sup> In 2001, high-tech employment

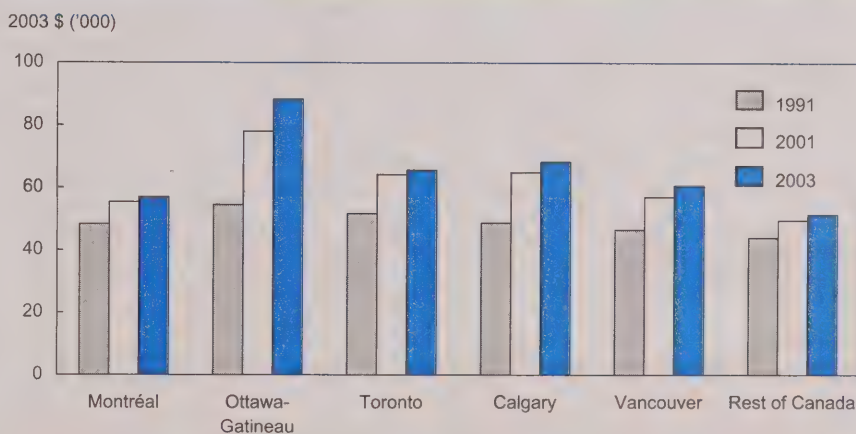
Marc Frenette is with the Business and Labour Market Analysis Division. He can be reached at 613-951-4228 or marc.frenette@statcan.ca.

**Chart A Ottawa-Gatineau has consistently had the highest ratio of CT workers**



Source: Statistics Canada, Longitudinal Worker File

**Chart B Mean earnings of CT workers increased most dramatically in Ottawa-Gatineau**



Source: Statistics Canada, Longitudinal Worker File

began to stabilize and shortly thereafter showed signs of contracting, accounting for 4.2% of the overall workforce in 2003 compared with 4.6% in 2001. Once again, Ottawa-Gatineau led the way, its share of high-tech employment declining sharply from 11.9% in 2001 to 10.1% in 2003. But earnings showed no decline at the national level—not surprising given the downward rigidity of nominal wages and the modest inflation at the time. High-tech workers in Ottawa-Gatineau, however, did see a substantial decline in earnings between 2001 and 2002 (\$78,000 to \$73,600). Nevertheless, they rebounded quickly, reaching \$88,300 in 2003. Given the large declines in employment at the time, the sudden increase in earnings may have been due to a change in the composition of the workforce in the high-tech sector as manufacturing jobs, which are typically lower-paying than service jobs, disappeared (Bowlby and Langlois 2002).

Although employment numbers suggest an important reversal, they may leave the impression that the sector ceased to grow. While this may be true in the aggregate, little can be said about how many workers were

actually affected by the meltdown. Overall employment can decline as a result of reduced hiring and natural attrition. And average earnings among high-tech workers say nothing about the fortunes of those laid-off workers who had to find a new job, possibly in a different sector. The well-being of laid-off workers is of particular concern given the rapid growth of 'technology clusters' (Jackson and Khan 2003). In such a cluster, employment opportunities may be limited for workers not considered part of the elite, which includes engineers, computer scientists and consultants. In a downturn, however, technology clusters may not have the infrastructure in place to accommodate a sudden influx of elite job seekers.

Using longitudinal administrative data, this study seeks to answer two questions (see *Data sources and definitions*). First, how likely were high-tech workers to face permanent layoffs during the downturn relative to other industries and time periods? Second, how substantial were the earnings losses of those who were laid off?

**Table 1 Means of the explanatory variables used in model**

	CT			Non-CT manufacturing			All other industries		
	At risk	No change	Laid off	At risk	No change	Laid off	At risk	No change	Laid off
<b>Firm size (employees)</b>	%								
Less than 20	12.1	7.5	21.4	11.0	6.9	20.7	23.5	15.1	42.7
20 to 99	15.6	12.0	23.1	20.2	17.0	28.1	16.5	13.2	22.3
100 to 499	15.9	13.6	18.1	21.0	21.0	21.1	13.0	12.4	12.3
500 and over	56.5	67.0	37.5	47.9	55.1	30.1	47.0	59.3	22.7
<b>Earnings</b>									
Less than \$50,000	55.5	47.8	69.8	71.1	62.9	87.9	78.8	70.5	90.9
\$50,000 to \$99,999	37.1	44.4	24.2	26.6	34.4	11.4	19.5	27.4	8.6
\$100,000 and over	7.4	7.8	6.1	2.3	2.7	0.7	1.7	2.1	0.6
<b>Men</b>	61.7	61.0	60.4	71.0	73.7	67.7	48.2	47.2	59.7
<b>Women</b>	38.3	39.0	39.6	29.1	26.3	32.4	51.8	52.8	40.3
<b>Montréal</b>	17.4	17.6	14.8	12.9	12.0	14.3	11.2	11.4	11.1
<b>Ottawa-Gatineau</b>	9.9	10.2	15.5	1.2	0.9	2.6	4.1	4.7	2.9
<b>Toronto</b>	28.0	27.2	25.1	17.8	16.9	17.1	14.6	14.4	10.8
<b>Calgary</b>	4.2	3.3	5.5	2.2	1.8	2.1	3.6	3.2	2.8
<b>Vancouver</b>	5.6	4.4	8.8	4.7	4.1	6.0	6.7	6.5	6.2
<b>Rest of Canada</b>	35.0	37.3	30.3	61.3	64.3	58.0	59.9	59.9	66.2
<b>Age</b>	35.8	36.5	35.0	36.7	37.4	35.9	36.6	37.7	35.7

Note: The explanatory variables correspond to the year prior to the potential permanent layoff, for the years 1991, 1996, and 2000.  
Source: Statistics Canada, Longitudinal Worker File



## High-tech workers profiled

Most of the analysis focuses on 1992 (end of the general recession and beginning of the 'jobless recovery'), 1997 (the beginning of a rapid growth period), and 2001 (beginning of the meltdown in high tech, despite continued growth in the rest of the economy).

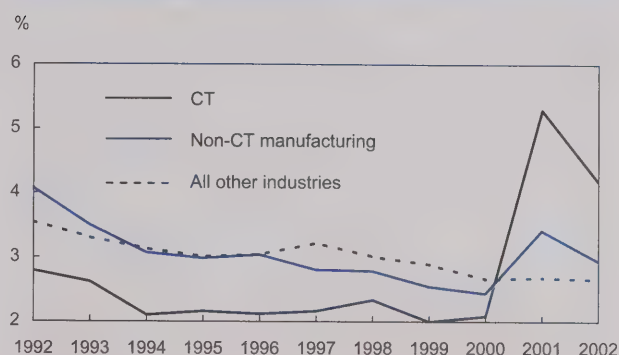
High-tech workers were more likely than other workers to be employed in large firms (500 employees or more) (Table 1). Not surprisingly, they had higher earnings than other workers; 7% earned \$100,000 or more, compared with only 2% in other industries. High tech is also male-dominated (62%), although not as much as manufacturing outside the computer and telecommunications (CT) sector (71%). On average, high-tech workers were about one year younger than other workers (35.8 compared with 36.7 in non-CT manufacturing and 36.6 in other industries). They were also far more likely to reside in major centres (especially Ottawa-Gatineau).

As in other industries, laid-off high-tech workers were more likely than those not laid off to be employed in small firms. However, this was less the case in CT and in non-CT manufacturing than in other industries. Also as in other industries, laid-off high-tech workers earned less than those not laid off. Laid-off workers in CT industries were as likely as those not laid off to be women. Laid-off workers in all industries were on average somewhat younger than those not laid off. Finally, laid-off high-tech workers were far more likely than those who kept their jobs to reside in Ottawa-Gatineau.

Focusing on a much less restrictive sample, an earlier study found that the permanent layoff rate rose from about 6% during the peak of the economic cycle in the late 1980s to about 7% during the recession of the early 1990s (Morissette 2004). The present study with its more stringent definition found a permanent layoff rate of only about 4% in the entire economy in 1992 (Chart C). Workers in the CT sector had a lower probability of experiencing a permanent layoff than workers in other industries. Over the remainder of the 1990s, permanent layoff rates declined slowly in CT industries and non-CT manufacturing, while remaining steady in other industries.

The relative stability of permanent layoff rates came to an abrupt end in 2001. First, non-CT manufacturing saw a sudden jump from 2.4% in 2000 to 3.4% in 2001. However, its magnitude was dwarfed by the

**Chart C The permanent layoff rate in CT spiked in 2001**



Source: Statistics Canada, Longitudinal Worker File

increase in layoffs in the CT sector. Here the rate more than doubled, from 2.1% in 2000 to 5.3% in 2001. In 2002, the probability of layoff was still relatively high (4.2%). Historically, the permanent layoff rates associated with the high-tech meltdown were unprecedented.

High-tech workers in all the major technology clusters appeared to face a greater risk of being laid off at the onset of the meltdown (Chart D). In no city was this more evident than in Ottawa-Gatineau, where the permanent layoff rate in high-tech jumped fivefold, from 2.2% in 2000 to 10.9% in 2001. Interestingly, a similar increase was registered in the non-CT manufacturing sector, all of which can be attributed to one particular industry: NAICS 3359, which includes communication and energy wire and cable manufacturing. This is part of the broader high-tech sector (information and communication technology, or ICT), and it cannot be separately identified with the Longitudinal Worker File used for this study. Ottawa-Gatineau was the only city that saw a substantial increase in the permanent layoff rate among non-CT manufacturing workers. High-tech workers in Calgary and Vancouver were also hard hit, each registering more than a threefold increase. In Toronto and Montréal, the rate doubled.

Based on a probit model, the probability of experiencing a permanent layoff was more or less equal across all three industry groups prior to the high-tech

**Chart D Ottawa-Gatineau CT workers were hardest hit by permanent layoffs**



Source: Statistics Canada, Longitudinal Worker File

meltdown (Chart E). Moreover, these probabilities were relatively stable prior to the downturn. In 2001, however, the high-tech sector saw a dramatic increase

in permanent layoff rates, even after accounting for pre-layoff differences in firm size, earnings, sex, and city of residence (see *Sample design*).



## Data sources and definitions

The term **high tech** is generally associated with the information and communication technology (ICT) sector, which requires the 5-digit North American Industry Classification System (NAICS) code, whereas the 4-digit code allows identification of the computer and telecommunications (CT) sector. CT is an important sub-sector of ICT, accounting for approximately 88% of its workforce. 'High tech' in this paper refers to the CT sector, which includes the following NAICS industries:

**Manufacturing:** commercial and service industry machinery (3333), computer and peripheral equipment (3341), communications equipment (3342), audio and video equipment (3343), semiconductor and other electronic components (3344)

**Services:** navigational, measuring, medical and control instruments (3345), computer and communications equipment and supplies wholesaler-distributors (4173), software publishers (5112), telecommunications (517), Internet service providers, web search portals, and data processing (518), computer systems design and related services (5415), and electronic and precision equipment repair and maintenance (8112). See Bowlby and Langlois (2002) for more details on the CT sector.

The requirements for the study are substantial: identifying high-tech workers and those who have been permanently laid off, a sample large enough for analysis, longitudinal data, and information on earnings as well as worker and firm characteristics.

Given that the high-tech sector accounts for less than 10% of the Canadian economy, and that reasons for separation are rarely available in large data sources, it should come as no surprise that virtually all Canadian sources are much too small for the required detail. The one exception is the **Longitudinal Worker File**, which is constructed from four administrative sources:

- The **Record of Employment (ROE)** file. The Employment Insurance Act requires employers to submit a form when an employee in insurable employment has an interruption in earnings. For this study, ROEs showing a layoff due to shortage of work were selected.
- The **T4** file. Virtually all workers receive a T4 slip from their employer to file with their income tax return. The T4 file contains earnings information from each firm in which the worker was employed during a given year. The worker's postal code is used to determine the city of residence.

- The **T1** tax file provides the worker's age and sex.
- The **Longitudinal Employment Analysis Program (LEAP)** file contains company-level industry and employment information. Industry is coded to the 4-digit NAICS for 2002 and is available back to 1991. Since not all workers spend the entire year with the same firm, employment is estimated by dividing the firm's total annual payroll by the average T4 earnings of all workers in the same industry and province.

The ROE, T4, and T1 were linked by social insurance number (SIN) for each year from 1983 to 2003. These 21 files were then linked to LEAP by a company identifier. The Longitudinal Worker File is a 10% random sample of all employees in this linked file. In any given year, those selected will appear more than once if they worked for more than one employer. Selected individuals remain in the sample as long as they are in the paid workforce and the last digit of their SIN does not change.<sup>3</sup> If workers become self-employed and have no paid job in a given year, they leave the sample.

This study looks at the probability of experiencing a permanent layoff in a given year  $t$ . The sample consists of workers who are 25 to 49 years old in the year prior to the reference year. Since older workers may opt to retire following a permanent layoff, they are excluded. Only the main job (the one with the highest T4 earnings in the year before the layoff) is considered. In the event of more than one job with the same earnings, one is chosen at random. A permanent layoff occurs when a worker is laid off from their main job and does not return to the same employer in the same or following year. As a result of these criteria, this study focuses more on significant jobs than other studies of permanent layoff rates. The result is lower permanent layoff rates than those usually reported. For example, Morissette (2004) reports that the overall permanent layoff rate among all jobs generally varies between 6% and 7%. In the current study, the permanent layoff rate is usually around 3%.

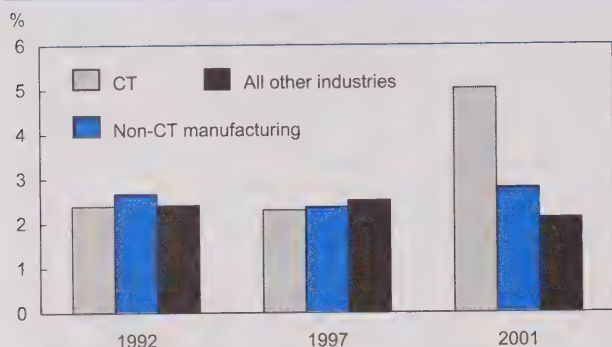
The study also looks at the change in earnings between year  $t-1$  and year  $t+2$ . Only workers with positive earnings in year  $t+2$  were included. For workers who were not permanently laid off in year  $t$ , only those who had the same main job in years  $t-1$  through  $t+2$  were selected.

The same model was estimated for each city in 2001 (Chart F).<sup>4</sup> Again, the results confirm that among the major cities, high-tech workers in Ottawa-Gatineau faced the highest probability of permanent layoff during the meltdown. Calgary and Vancouver ranked second and third, followed by Montréal and Toronto.

## Earnings losses of high-tech workers

In the business cycle, the early to mid-1990s was known as the jobless recovery. This was reflected in substantial earnings losses among workers laid off in 1992 from all industries excluding non-CT manufacturing, and computer and telecommunications (Chart G).

**Chart E The predicted probability of experiencing a permanent layoff jumped significantly for CT in 2001**



Source: Statistics Canada, Longitudinal Worker File

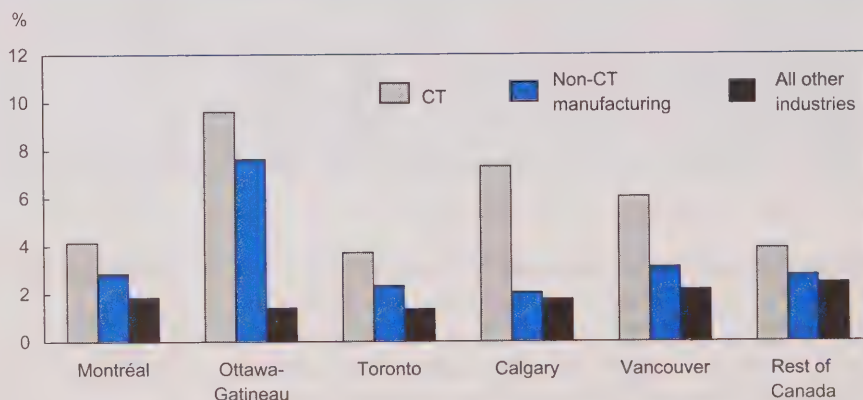
Among this group, average earnings declined from \$25,500 in the year prior to the layoff to \$21,200 in the year following the layoff. However, in the second year after the layoff they bounced back to \$25,600 so that over the three-year period, average earnings increased by \$100. By comparison, workers not laid off saw their earnings increase by \$2,800 over the same period. In contrast, workers laid off in the midst of the economic recovery (1997) saw their average earnings increase by \$4,800 between 1996 and 1999. This bettered the gains registered among workers not laid off at this time (\$4,100). Since 2000, the economy has been operating at a 'sustained peak.' Among workers laid off in 2001, average earnings increased by \$1,700, compared with \$3,400 for those not laid off. In general, it appears that laid-off workers outside the non-CT manufacturing and computer and telecommunications sectors did not incur large earnings losses. The one exception was during the jobless recovery of the first half of the 1990s, when earnings of permanently laid-off workers dipped suddenly but then recovered quickly.

In the non-CT manufacturing sector, earnings losses appear to be more substantial (Chart G). Here,

workers laid off in 1992 saw a decline of \$1,100 between 1991 and 1994, while those not laid off experienced an increase of \$5,400. During the economic recovery of the late 1990s, laid-off workers saw average gains of about \$3,400 over the three-year period surrounding the layoff, compared with \$5,200 among their counterparts who were not laid off. For those laid off in 2001, the loss was about \$2,600, compared with a gain of about \$1,500 for those not laid off. Clearly, non-CT manufacturing workers experienced larger earnings losses if they were laid off than those in the other industries category. This is true in absolute terms and also relative to the gains experienced by workers who were not laid off.

Although earnings losses in the non-CT manufacturing sector were large, they were nowhere near those experienced by laid-off CT workers. High-tech workers laid off in 1992 experienced a loss of about \$700 in annual earnings between 1991 and 1994. The nascent high-tech boom had already begun driving wages upwards, with increases among those not laid off of about \$4,600 during this time. In 1997, even laid-off workers saw substantial earnings gains over the three-year period surrounding their layoff (about \$6,500)—not surprising given that the sector was expanding rapidly and jobs were plentiful (Chart A). However, some may have missed opportunities for advancement and higher earnings since their counterparts who remained employed saw gains of about

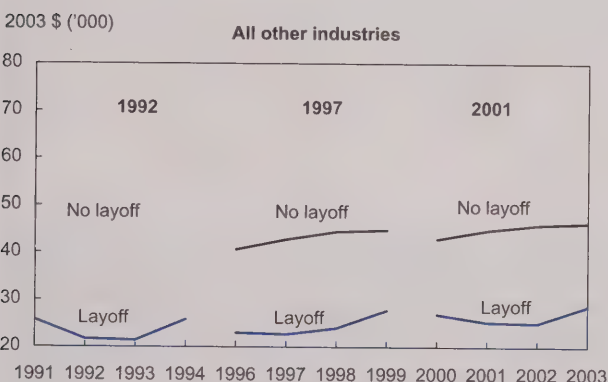
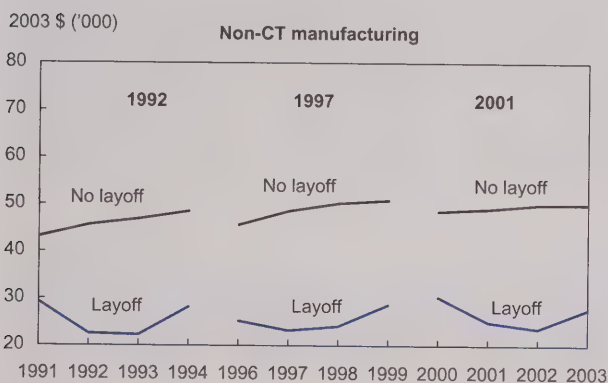
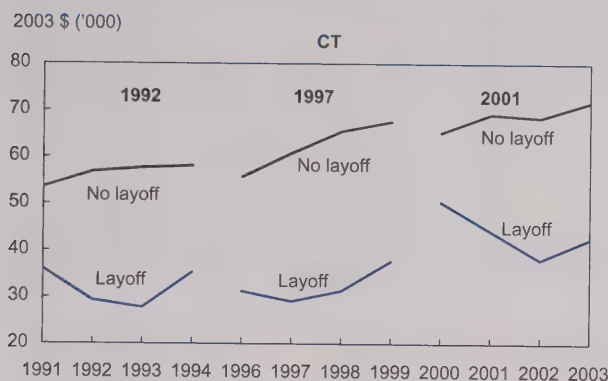
**Chart F Ottawa-Gatineau and Calgary CT workers had the highest predicted probabilities of experiencing a permanent layoff in 2001**



Source: Statistics Canada, Longitudinal Worker File



**Chart G Mean earnings of CT workers, even those laid off, continued above average**



Source: Statistics Canada, Longitudinal Worker File

\$11,900. During the meltdown, the situation was very different. Laid-off high-tech workers had earnings losses of about \$7,900 while those who managed to keep their jobs saw increases of about \$6,600.

Two points are evident: First, laid-off high-tech workers experienced far greater earnings losses than workers in other industries (Chart H). Second, those who were laid off during the meltdown saw the greatest losses of all, including workers laid off during the jobless recovery of the 1990s. Only time will tell the extent to which these losses will be recovered.

### Mobility of laid-off CT workers

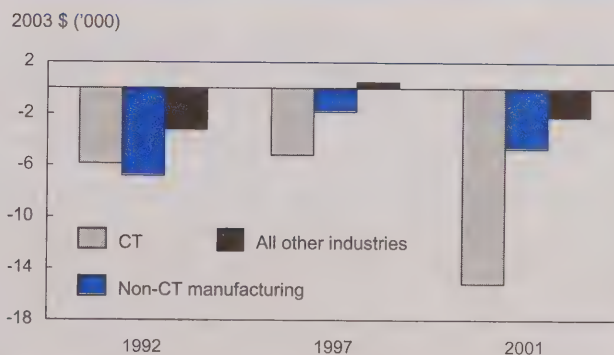
Another potential consequence of being laid off is failure to find a job in the same industry. Moving to another city may become necessary to continue one's career or find a job in a different industry. Both cases may entail significant financial and psychological costs. Only one in five laid-off CT workers found a job in the same sector. Among those who moved out of CT, the most common destination was business services, followed by consumer services and manufacturing.

Among laid-off CT workers living in the five major cities, about 1 in 3 moved to another city. Most targeted a non-major centre. Ottawa-Gatineau ranked last in terms of retaining laid-off CT workers, with only 3 in 5 remaining in the city (Table 2).

### Conclusion

The high-tech sector made tremendous economic gains throughout the 1990s. Jobs were plentiful and pay was high. However, the momentum generated by the sector came to a sudden halt in 2001, as Canada and the rest of the industrialized world experienced a

**Chart H Laid-off CT workers had the largest predicted net loss in earnings in 2001**



Source: Statistics Canada, Longitudinal Worker File

**Table 2 High-tech workers permanently laid off in 2001 by city in 2000 and 2003**

	City in 2000				
	Montréal	Ottawa-Gatineau	Toronto	Calgary	Vancouver
<b>City in 2003</b>					
			%		
Montréal	74.4	1.0	0.3	0.0	0.7
Ottawa-Gatineau	0.0	60.6	0.6	0.0	0.0
Toronto	1.3	2.0	69.9	0.0	0.7
Calgary	0.0	0.7	0.0	76.1	0.0
Vancouver	0.0	1.0	0.3	0.9	71.2
Rest of Canada	24.4	34.8	28.9	23.0	27.3

Source: Statistics Canada, Longitudinal Worker File

high-tech meltdown. Despite countless news reports of mass layoffs and the plight of unemployed high-tech workers, very little statistical evidence exists on these two fronts.

This study shows that the high-tech meltdown resulted in an unprecedented increase in the probability of experiencing a permanent layoff, the likes of which had never

been seen in the sector or the rest of the economy. High-tech workers in Ottawa-Gatineau, a major technology cluster, were hit particularly hard. Those laid off saw a steep decline in their earnings—well above that experienced by any other group, even during the jobless recovery of the 1990s. Among laid-off high-tech workers overall, about 4 in 5 did not find jobs in the sector, and about 1 in 3 moved to another city. In Ottawa-Gatineau, about 2 in 5 left the city.

The meltdown may also have had a significant impact on workers who kept their jobs. Workers with a high level of job insecurity generally report higher levels of long-term psychological and physical health problems (Dekker and Schaufeli 1995; De Witte 1999; Van Vuuren et al. 1990). In the case of the high-tech meltdown, evidence

### Sample design

Year	t-1	t	t+2
Sample	All workers aged 25 to 49 in their main job	Permanent layoff (from main job in t-1)	Positive earnings (from all jobs)
		No permanent layoff (from main job in t-1)	Positive earnings (from all jobs) and same main job from t-1 to t+2

For each cohort of workers at risk of losing their main job in year  $t$ , two models were estimated. The first was a probit model on the probability of experiencing a permanent layoff (PLO) in year  $t$ , expressed as a function of several characteristics from year  $t-1$ : the industry of the main job (IND), firm size in the main job (SIZE), total earnings from all jobs (EARN), a female dummy variable (FEM), age and age squared (AGE and AGE<sup>2</sup>), and the city of residence (CITY).

$$1 \quad \Pr(PLO_{i,t} = 1) = \Phi(\alpha_0 + \alpha_1 IND_{i,t-1} + \alpha_2 SIZE_{i,t-1} + \alpha_3 EARN_{i,t-1} + \alpha_4 FEM_i + \alpha_5 AGE_{i,t-1} + \alpha_6 AGE_{i,t-1}^2 + \alpha_7 CITY_{i,t-1} + \varepsilon_i)$$

The second model, estimated by ordinary least squares (OLS), looked at the absolute change in earnings ( $\Delta EARN$ ) as a function of similar variables, except that the industry variables were interacted with a dummy variable indicating a permanent layoff.

$$2 \quad \Delta EARN_{i,t-1,t+2} = \beta_0 + \beta_1 IND_{i,t-1} + \beta_2 PLO_{i,t} + \beta_3 IND_{i,t-1} * PLO_{i,t} + \beta_4 SIZE_{i,t-1} + \beta_5 EARN_{i,t-1} + \beta_6 FEM_i + \beta_7 AGE_{i,t-1} + \beta_8 AGE_{i,t-1}^2 + \beta_9 CITY_{i,t-1} + \mu_i$$



suggests that job insecurity has a greater impact on stress than employment status. A survey of employed and unemployed high-tech workers during the meltdown found that unemployed high-tech workers reported higher levels of stress than those who were employed (Mantler et al. 2005). The difference was fully explained by a higher level of job uncertainty among unemployed workers.

### Perspectives

#### ■ Notes

1 High tech is defined in this article as the computer and telecommunications sector. See *Data sources and definitions* for more details.

2 See Bowlby and Langlois (2002), Bowlby (2003), and Vaillancourt (2003) for some documented evidence.

3 In most instances, a change in social insurance number occurs after a temporary resident working in Canada with a temporary number becomes a permanent resident and is issued a permanent one.

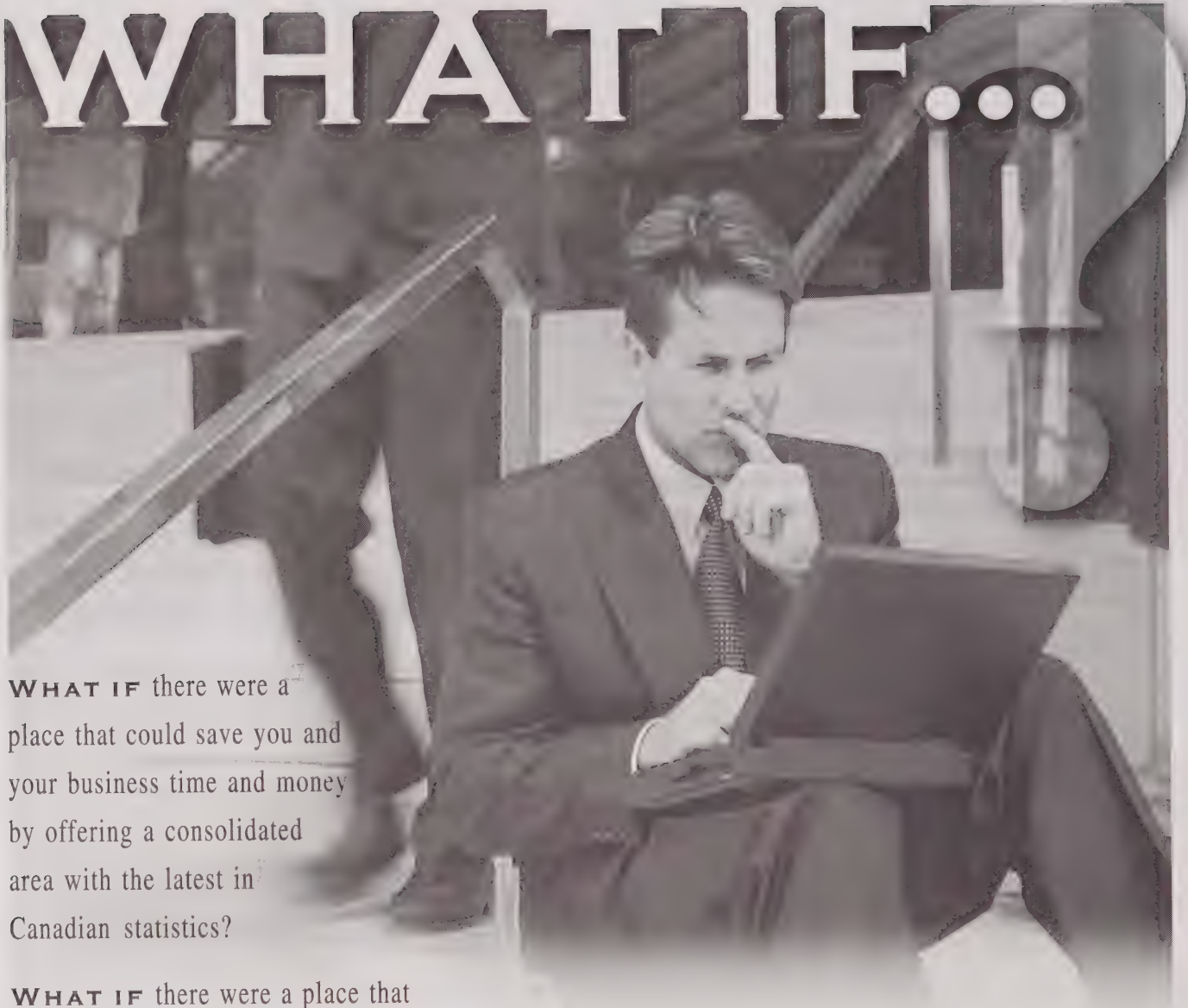
4 Small sample sizes did not permit detailed analysis for Calgary in earlier years.

#### ■ References

- Bowlby, Geoff. 2003. "High-tech—two years after the boom." *Perspectives on Labour and Income*. Vol. 15, no. 4. Winter. Statistics Canada Catalogue no. 75-001-XPE. p. 27–30.
- Bowlby, Geoff and Stéphanie Langlois. 2002. "High-tech boom and bust." *Perspectives on Labour and Income*. Vol. 14, no. 2. Summer. Statistics Canada Catalogue no. 75-001-XPE. p. 9–14.
- Dekker, S. and W. Schaufeli. 1995. "The effects of job insecurity on psychological health and withdrawal: A longitudinal study." *Australian Psychologist*. Vol. 30, no. 1. p. 57–63.
- De Witte, Hans. 1999. "Job insecurity and psychological well-being: Review of the literature and exploration of some unresolved issues." *European Journal of Work and Organizational Psychology*. Vol. 8, no. 2. p. 155–177.
- Jackson, Edward T. and Rahil Khan. 2003. *Seeking Sustainable Livelihoods: Constructing a Role for Community Economic Development in Technology-Cluster Growth*. Ottawa. Caledon Institute of Social Policy. 21 p.
- Mantler, Janet, Amanda Matejcek, Kimberly Matheson and Hymie Anisman. 2005. "Coping with employment uncertainty: A comparison of employed and unemployed workers." *Journal of Occupational Health Psychology*. Vol. 10, no. 3. July. p. 200–209.
- Morissette, René. 2004. "Permanent layoff rates." *Perspectives on Labour and Income*. Vol. 16, no. 2. Summer. Statistics Canada Catalogue no. 75-001-XPE. p. 15–24.
- Vaillancourt, C. 2003. *A Profile of Employment in Computer and Telecommunications Industries*. Statistics Canada Catalogue no. 56F0004MIE, no. 9. Connectedness Series. 16 p.  
<http://www.statcan.ca/english/research/56F0004MIE/56F0004MIE2003009.pdf> (accessed June 27, 2007).
- Van Vuuren, Tinka, Bert Klandermans, Dan Jacobson and Jean Hartley. 1990. "Employees' reactions to job insecurity." In *Job Insecurity: Coping with Jobs at Risk*. J. Hartley, D. Jacobson, B. Klandermans, and T. van Vuuren (eds.). London. Sage Publications. 256 p.

We welcome your views on articles and other items that have appeared in *Perspectives*. Additional insights on the data are also welcome, but to be considered for publication, communications should be factual and analytical. We encourage readers to inform us about their current research projects, new publications, data sources, and upcoming events relating to labour and income.

Statistics Canada reserves the right to select and edit items for publication. Correspondence, in either official language, should be addressed to *Perspectives on Labour and Income*, 170 Tunney's Pasture Driveway, 9-A5 Jean Talon, Statistics Canada, Ottawa, Ontario K1A 0T6. Fax 613-951-4179; e-mail: [perspectives@statcan.ca](mailto:perspectives@statcan.ca).



**WHAT IF** there were a place that could save you and your business time and money by offering a consolidated area with the latest in Canadian statistics?

**WHAT IF** there were a place that offered accessible and reliable data on an assortment of current hot topics on Canadian social and economic themes?

**WHAT IF** there were a place where analysis experts that know your markets could provide you with advice and customized data at your fingertips?

**WHAT IF** there were such a place?

**THERE IS SUCH A PLACE.**



**[www.statcan.ca](http://www.statcan.ca)**  
**BUILT FOR BUSINESS**

The official source of Canadian statistics  
All the time — All in one place



# Participation of older workers

Katherine Marshall and Vincent Ferrao

Interest in the labour market behaviour of the baby-boom generation (those born between roughly 1946 and 1965) continues unabated—and for good reason. The activity rate of this population bulge can affect employment levels, the economy in general, the use of public services, as well as individual and family economic well-being of boomers themselves. For some years now, special attention has been paid to their predicted retirement patterns since a mass wave of early departures could cause serious disruption to the labour force.

However, recent studies and indicators suggest that baby boomers may not in fact be collectively fleeing employment for 'freedom 55' (Copeland 2007; Martel et al. 2007; Wannell 2007). The oldest boomers turned 60 in 2006, the same year that saw a record proportion of 60 to 64 year-olds in the labour force (45%). Furthermore, the average age of retirement remained steady at 61.5—still up from a low of 60.9 in 1998. The non-exodus of older workers may be dampening the threat of a sudden and severe labour shortage.

This article examines the labour market trends of the population aged 55 to 64.<sup>1</sup> As well, it looks at the employment characteristics of those with a job in 2006 vis-à-vis core-age workers (aged 25 to 54). Are older workers starting to reduce their work hours or change jobs, or is it business as usual? This age range is of particular interest as most people are expected to retire sometime between 55 and 65. Indeed, labour force participation falls dramatically for those 65 and over. In 2006, only 13% of women and 23% of men aged 65 to 69 were in the labour force, and for those aged 70 and over the rates dropped to 2% and 7% respec-

tively. (For more information on the employed 65-and-over age group, see Walsh 1999 and Duchesne 2004.)

## An older population, and more working

Over two million people aged 55 to 64 were employed or looking for work in 2006, representing 12% of the total labour force—up from one million (10%) in 1976 (Table 1). The two principal forces behind these increases are an aging population and rising labour force participation rates<sup>2</sup> among older workers. For example, as a proportion of the total population,

Table 1 Characteristics of the 55-to-64 age group

	1976			2006		
	Both sexes	Men	Women	Both sexes	Men	Women
Population ('000)	1,916	926	990	3,615	1,780	1,836
% of total population	11	5	6	14	7	7
Labour force ('000)	1,017	703	314	2,123	1,180	943
% of total labour force	10	7	3	12	7	5
%						
<b>Education</b>						
University degree	5	7	4	19	22	17
Less than university	95	93	96	81	78	83
<b>Labour force participation rate</b>						
University degree	53	76	32	59	66	51
Less than university	75	86	53	67	72	60
	52	75	31	57	65	50

Source: Statistics Canada, Labour Force Survey

Katherine Marshall is with the Labour and Household Surveys Analysis Division. She can be reached at 613-951-6890 or [katherine.marshall@statcan.ca](mailto:katherine.marshall@statcan.ca). Vincent Ferrao is with the Labour Statistics Division. He can be reached at 613-951-4750 or [vincent.ferrao@statcan.ca](mailto:vincent.ferrao@statcan.ca).

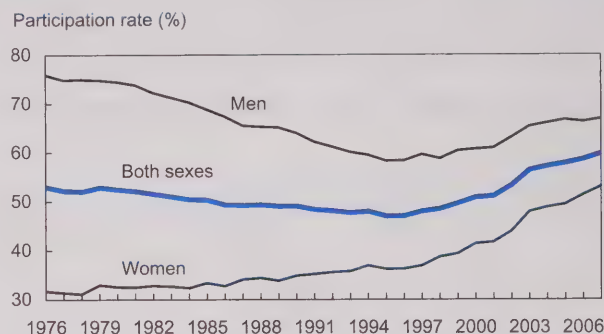
those aged 55 to 64 represented 11% in 1976 and 14% in 2006—a proportion predicted to grow as the later and larger part of the baby-boom generation ages (Chart A). At the same time, the overall labour force participation rate for this group increased from 53% to 59%. However, behind this increase are two different trends for men and women. The participation rate for older men went from a high of 76% in 1976 to a low of 58% in 1995, rebounding by 2007 to 67%. Women, on the other hand, have seen a constant increase, from 32% to 53% (Chart B).<sup>3</sup>

### Majority in their late 50s still working

A breakdown by age shows that the majority of men aged 55 to 59 were attached to the labour force in 2006 (76%). This rate was below the 1976 high of 84% but above the 1998 low of 71% (Chart C). Meanwhile, women of the same age saw their participation rate climb steadily, from 38% in 1976 to 62% in 2006. Not surprisingly, a smaller proportion of people in their early 60s (60 to 64) participated in the labour force, but again recent increases have occurred for men (from 43% in 1995 to 53% in 2006) and women have seen continued gains (reaching a record of 37% in 2006).

Although the long-term trends are similar in Canada and the United States, the U.S. participation rates are generally higher for both men and women. Women

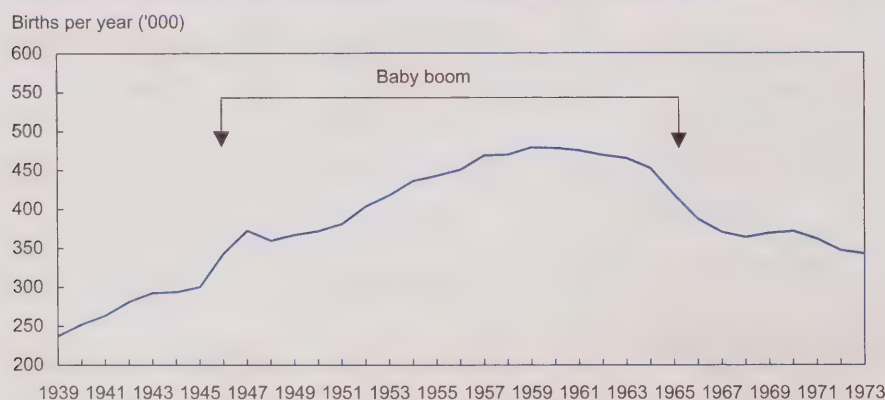
**Chart B Six in ten 55 to 64 year-olds in the labour force in 2007**



Note: 2007 is a January-to-June average.  
Source: Statistics Canada, Labour Force Survey

show larger gaps, with 67% of Americans aged 55 to 59 and 47% aged 60 to 64 in the labour force in 2006—4 and 10 percentage points higher respectively than their Canadian counterparts. This is intriguing given that younger Canadian women have consistently higher labour force participation rates than their American counterparts.<sup>4</sup> One possible reason could be that some older Americans purposely remain employed in order to have continued access to employment-based health insurance (Copeland 2007) since universal health care coverage (Medicare) is offered to Americans only at age 65.

**Chart A The baby boom consisted of roughly 20 years of above-average births**

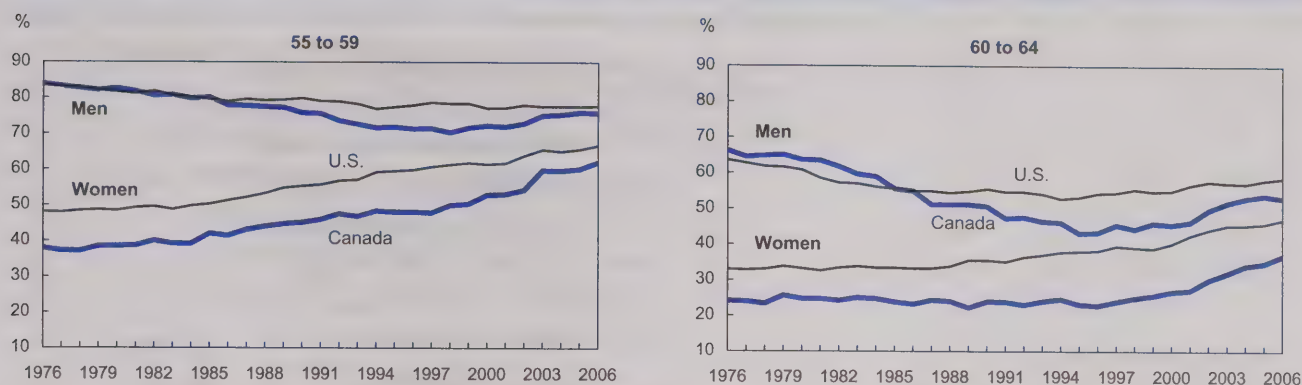


Source: Statistics Canada, Vital Statistics

### Women and education levels likely to keep trend line rising

Women's labour force attachment today is much stronger throughout the life cycle than in the past. Therefore, as younger generations of women reach their retirement years, they will have higher rates of labour force participation than their predecessors. For example, differences are evident among those aged 55 to 64 in 2006 (the age group under study) and those 10 years older. Women in the younger cohort were much more likely than those in the older one to be attached to



**Chart C Labour force participation rates for those 55 to 64 generally higher in the United States**

Sources: Statistics Canada, Labour Force Survey; US Department of Labor, Bureau of Labor Statistics

the labour force when they were aged 35 to 44—72% compared with only 53% (Chart D).<sup>5</sup> In contrast, little difference is seen for labour market activity and life cycle between the two different cohorts of men except at the near-retirement age when the younger group was more likely to be participating in the labour market (66% versus 58%).

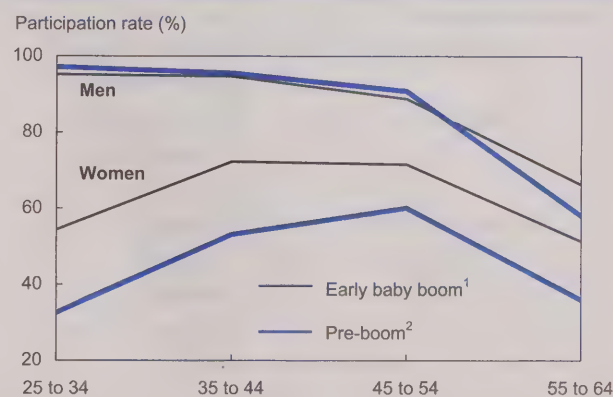
A second reason to expect continued growth in the participation rate of those aged 55 to 64 is the increasing level of educational attainment. The higher the level of education, the greater the likelihood of being employed since more schooling often translates into higher-quality job opportunities and higher earnings. Those with a university degree, for example, have much higher participation rates than those without a degree; in 1976, only 5% of those aged 55 to 64 had graduated from university, but by 2006 this proportion had increased to 19% (Table 1).

The second half of this article focuses on those aged 55 to 64 who were employed sometime in 2006.

### Alberta leads the way

Despite variation, the employment rates of 55 to 64 year-olds are higher in every province than ever before (Chart E). The country is in the midst of a tight labour market and employer demand is boosting employment levels.

In 2006, Alberta had the highest employment rate of older workers (68%). Because of the oil boom, the province has been experiencing labour shortages in many industries and occupations and is attracting workers of all ages. It is therefore not surprising to see Alberta continuing to lead the way in the proportion

**Chart D Participation rates for early baby-boom women consistently higher than for pre-boom cohort**

1 Age 55 to 64 in 2006 and born between 1942 and 1951. (Not all birth years are strictly in the designated cohort label.)

2 Age 65 to 74 in 2006 and born between 1932 and 1941.

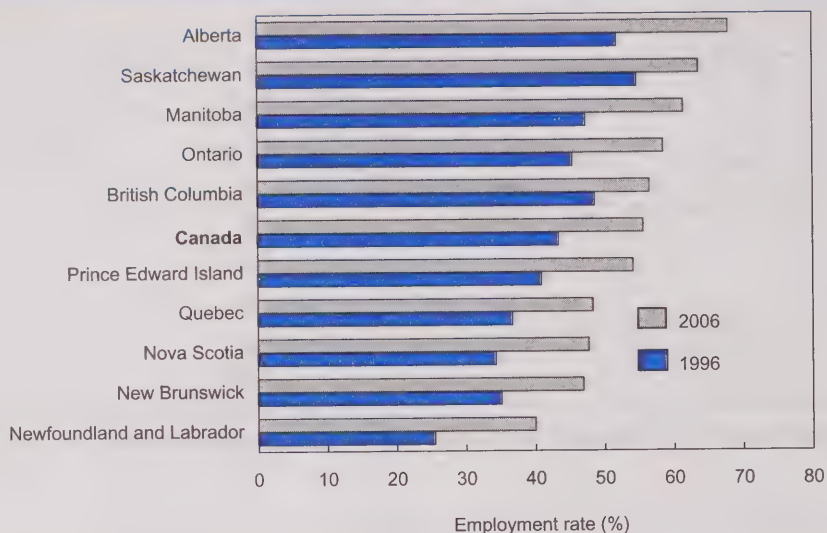
Source: Statistics Canada, Labour Force Survey, 1966, 1976, 1986, 1996 and 2006

of older workers with a job. Saskatchewan and Manitoba also had rates of over 60%. The proportions in Ontario and British Columbia were also slightly above the national rate of 56%, while Prince Edward Island was just below (54%). Quebec, Nova Scotia, New Brunswick as well as Newfoundland and Labrador were further below the national average, although they have also shown upward trends in recent years.

### Most older workers are employed in services

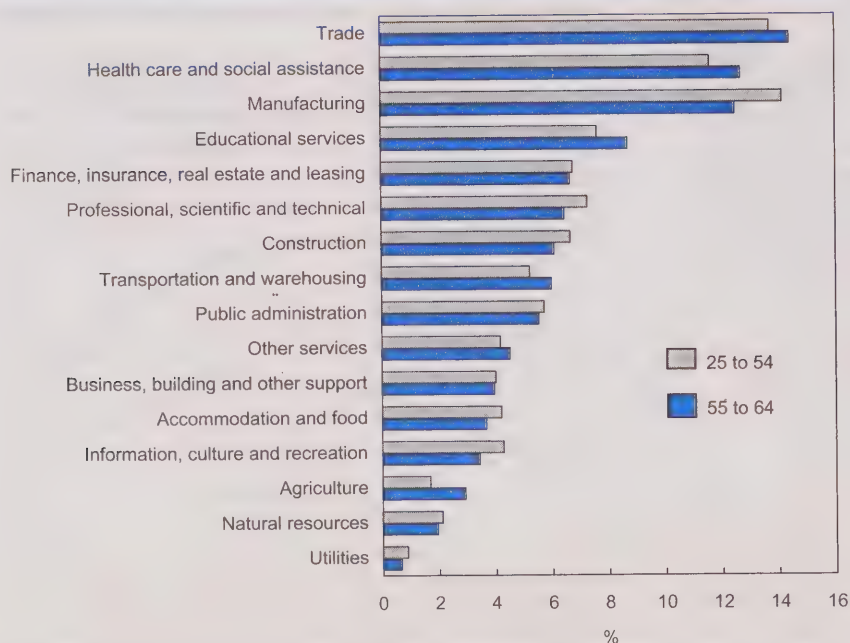
About 3 in 4 workers aged 55 to 64 were employed in the service sector in 2006, similar to the proportion for those aged 25 to 54. Retail and wholesale trade had the largest share of older workers, followed by health care and social

**Chart E Almost 7 in 10 Albertans aged 55 to 64 had a job in 2006**



Source: Statistics Canada, Labour Force Survey

**Chart F Employment by industry generally similar for core-age and older workers**



Source: Statistics Canada, Labour Force Survey, 2006

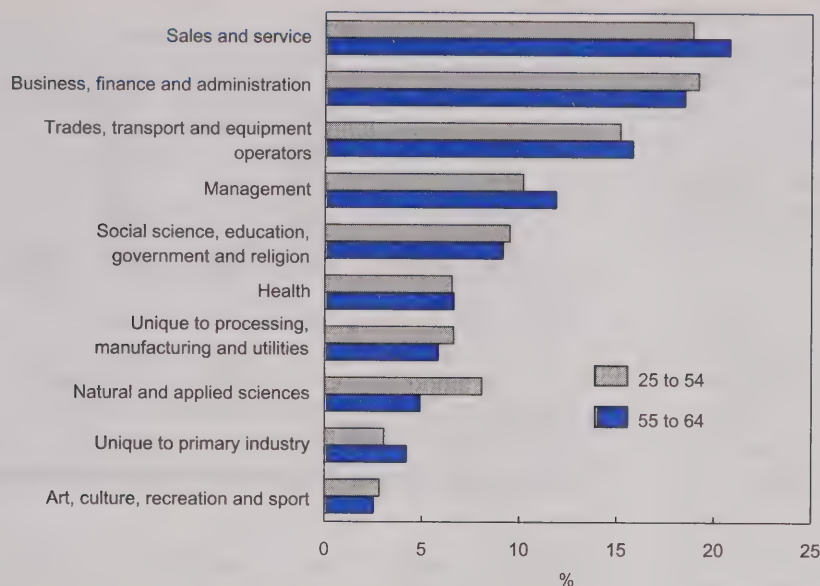
assistance (Chart F). Within the goods sector, which employed 25% of older workers in 2006, about half worked in manufacturing.

The distribution of older workers by occupation is also not much different from their core-age counterparts. In 2006, just over 20% of 55 to 64 year-olds were employed in sales and service occupations, followed by business, finance and administration; and trades, transport and equipment operators (Chart G). In 2006, relatively more older workers than persons aged 25 to 54 were employed in management occupations (12% versus 10%). Accumulated experience may explain the slight difference.

### Self-employment and part-time work rates notable among older workers

Even though core-age and older workers may have similar occupation and industry employment pat-



**Chart G More than 1 in 5 older workers held sales and service jobs**

Source: Statistics Canada, Labour Force Survey, 2006

The shift towards non-standard work arrangements among older workers suggests that some are making a conscious transition towards retirement. One indication is that two-thirds of older part-time workers reported working a shorter work week from preference, compared with only one-quarter of core-age part-timers.

### Older men earn the most

Older men who remain employed appear to be economically rewarded. Despite having shorter work hours, their higher hourly earnings (\$24.31) are sufficient to place them first in terms of average weekly earnings (Chart H). Since the hourly rate for older women (\$19.23) is below core-age women (\$19.59), and more than 1 in 4 work part time, their weekly earnings are more than \$300 less than their male counterparts (\$643).

terns, their work arrangements vary. Self-employment is much higher for older workers, for example, and particularly for men—18% of core-age men were self-employed in 2006 compared with 30% of those aged 55 to 64 (Table 2). Although the difference was less striking, older women also had a higher rate of self-employment than core-age women.

Workers aged 55 to 64 have shorter average weekly work hours than core-age workers (37.7 versus 39.0), although the gap is narrower for men (40.9 versus 42.1) than for women (33.6 versus 35.6). This is because more older workers, particularly women, tend to work part time—11% of men and 28% of women, compared with 5% of men and 19% of women aged 25 to 54.

**Table 2 Job characteristics of core-age and older workers**

	25 to 54			55 to 64		
	Both sexes	Men	Women	Both sexes	Men	Women
Employed	11,620	6,127	5,493	2,012	1,117	895
Employment rate <sup>1</sup>	82	86	77	56	63	49
<b>Class of worker</b>						
Employee	85	82	88	76	70	83
Public sector	22	16	28	22	16	30
Private sector	63	66	60	54	54	53
Self-employed	15	18	12	24	30	17
Unionized (employees)	35	34	35	39	38	39
<b>Type of work</b>						
Full-time	88	95	81	81	89	72
Part-time	12	5	19	19	11	28
Part-time by preference	28	26	29	66	64	67
Average usual hours (all jobs)	39.0	42.1	35.6	37.7	40.9	33.6

1 Number employed expressed as a percentage of the population.

Source: Statistics Canada, Labour Force Survey, 2006

## Older workers take more time off from work

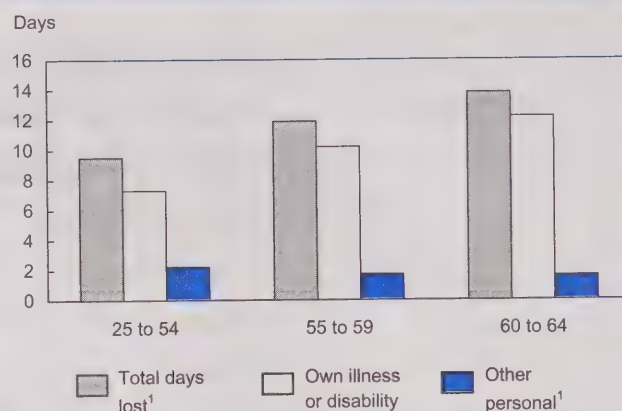
Older employees tend to be absent from their job because of illness or disability more often than their core-age counterparts. In 2006, 55 to 59 year-olds working full time lost just over 10 days for this reason while 60 to 64 year-olds lost just over 12 days; 25 to 54 year-olds were absent only 7 days (Chart I). Health issues could be more common among older workers, but unionization and working in the public sector are also linked with higher absenteeism rates—characteristics more prevalent among older workers (Statistics Canada 2007).

### Summary

Although a higher proportion of workers aged 55 to 64 are self-employed and have shorter workweeks than core-age workers, the majority are employees (76%) and work full time (81%). Furthermore, earnings and occupations of older and core-age workers are strikingly similar.

During the past decade, the participation rate of men and women aged 55 to 64 has climbed steadily, reaching 60% in the first half of 2007. This is an important trend since most of this age group are members of the front end of the baby-boom cohort (those aged 55 to 61 in 2007), and their labour market attachment suggests a strengthening participation rate in the near future. Women's increasing labour force participation and rising educational attainment in particular imply a

**Chart I Days lost per year increase with age among full-time employees**



¹ Excluding maternity leave.

Source: Statistics Canada, Labour Force Survey, 2006

continued upward trend. A third influence may be an increasing desire among those over 55 to continue working, either out of interest, financial concern, or a social shift brought about by a tighter labour market, skill shortages and the virtual elimination of mandatory retirement at age 65. Whatever the reasons, the increasing labour force participation rate among older workers will likely soften the eventual economic impact of the aging baby-boom cohort.

### Perspectives

#### Notes

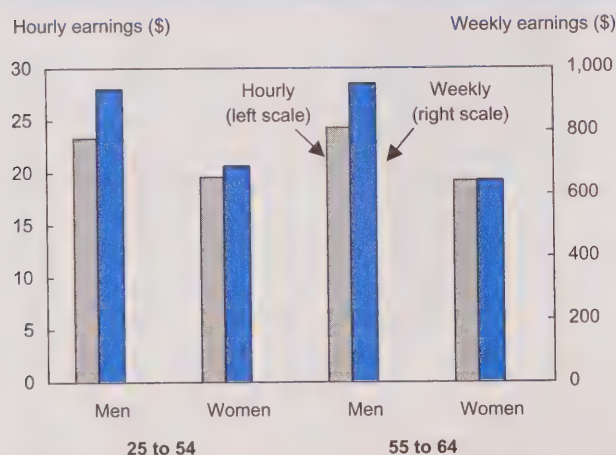
1 The data for this article come from the Labour Force Survey (LFS), a monthly household survey that collects information on labour market activity from all persons 15 years and over. For detailed information about the LFS, look on the Statistics Canada's Web site under *Definitions, data sources and methods* for an alphabetical listing of surveys and statistical programs.

2 The labour force (the employed plus the unemployed) expressed as a percentage of the population.

3 The 2007 figure is a January-to-June average.

4 In 2006, 70% of Canadian women aged 16 to 24, and 81% of those aged 25 to 54, were in the labour force; this compared with 58% and 75% respectively for American women.

**Chart H Older men retain their earning power**



Source: Statistics Canada, Labour Force Survey, 2006



5 LFS participation rates from 1976 and 1986 were used for these figures. For example, those born between 1942 and 1951 were aged 35 to 44 in 1986, and those born between 1932 and 1941 were this age in 1976.

## ■ References

Copeland, Craig. 2007. "Labor-force participation: The population age 55 and older." Employee Benefit Research Institute, *Notes*. Vol. 28, no. 6. June. p. 1–8. Washington.

Duchesne, Doreen. 2004. "More seniors at work." *Perspectives on Labour and Income*. Vol. 16, no. 1. Spring. Statistics Canada Catalogue no. 75-001-XPE. p. 55–67.

Martel, Laurent, Eric Caron-Malenfant, Samuel Vézina and Alain Bélanger. 2007. "Labour force projections for Canada, 2006-2031." *Canadian Economic Observer*. Vol. 20, no. 6. June. Statistics Canada Catalogue no. 11-010-XIB. <http://www.statcan.ca/english/freepub/11-010-XIB/00607/feature.htm> (accessed July 9, 2007).

Statistics Canada. 2007. *Work Absence Rates, 2006*. Statistics Canada Catalogue no. 71-211-XWE. Ottawa. <http://www.statcan.ca/english/freepub/71-211-XIE/71-211-XIE2007000.htm> (accessed July 9, 2007).

Walsh, Mark. 1999. "Working past age 65." *Perspectives on Labour and Income*. Vol. 11, no. 2. Summer. Statistics Canada Catalogue no. 75-001-XPE. p. 16–20. <http://www.statcan.ca/english/studies/75-001/archive/e-pdf/e-9922.pdf> (accessed July 9, 2007).

Wannell, Ted. 2007. "Public pensions and work." *Perspectives on Labour and Income*. Vol. 19, no. 3. Autumn. Statistics Canada Catalogue no. 75-001-XPE. p. 39–46.

## Back Issues: *Did you miss something?*

*Don't worry!* Back issues of **Perspectives on Labour and Income** are available.

Feature articles in these issues include:

- |                    |  |
|--------------------|--|
| <b>Summer 2007</b> | The busy lives of teens • Payday loans • Fuelling the economy • GDP and employment growth • Literacy and employability • Varia: <i>Work absence rates, Gambling</i>  |
| <b>Spring 2007</b> | Revisiting wealth inequality • Work hours instability • Canada's unemployment mosaic, 2000 to 2006 • The aboriginal labour force in Western Canada • Young pensioners • Defining retirement • Varia: <i>Personal debt in Canada and the U.S.</i> |
| <b>Winter 2006</b> | The core-age labour force • Earnings instability • Training through the ages • Balancing career and care • Measuring housing affordability • Varia: <i>Minimum wage • Cumulative index 1989-2006</i>   |
| <b>Autumn 2006</b> | Converging gender roles • Wives as primary breadwinners • Education and earnings • Is the workplace becoming safer? • The GST credit • Increased work stoppages • Fact-sheets: <i>Unionization, Gambling</i>                                     |

For more information, contact **Statistics Canada, Dissemination Division, Circulation Management, 100 Tunney's Pasture Driveway, Ottawa, Ontario K1A 0T6**. Or, call toll free **1 800 267-6677**.

## Perspectives on Labour and Income

*The quarterly for labour market and income information*

# DISCOVER

## labour market trends in seconds

### When you need a snapshot of the labour market

...when you need quick answers or in-depth analysis

...when you need to see historical movements

...when you need labour-related data for a presentation or report

...you'll find that the **Labour Force Historical Review on CD-ROM** is the perfect solution.

This easy-to-use CD-ROM, issued annually, lets you discover labour market patterns in seconds!

Incorporating a user-friendly data browser, the **Labour Force Historical Review on CD-ROM** is an essential tool providing:

### Accurate, timely data...

- ⚙ actual and seasonally adjusted data series
- ⚙ on a monthly or annual basis

### ...plus historical information...

- ⚙ over 25 years of data (from 1976 to 2005)



- ⚙ allowing you to quickly spot trends as you browse different chart displays

### ...in a tremendously useful format!

- ⚙ with thousands of cross-classified data series

- ⚙ and the functionality for easy export of the data into any spreadsheet package for data manipulation
- ⚙ plus effortless analysis of this large library of multi-dimensional statistics

### At the click of a mouse, access key variables, such as:

- ⚙ employment and unemployment levels and rates
- ⚙ demographic characteristics including age, sex, educational attainment and family variables
- ⚙ national, provincial, metropolitan areas and economic regions
- ⚙ industry, occupation, wages, union membership, job tenure
- ⚙ workplace size and hours worked ...and much more.

As researchers, economists, analysts, consultants and planners in both private enterprise and the public sector, you will value this comprehensive information resource for your labour-related questions, analysis or forecasting.

For more detailed information on this CD-ROM, visit our Web site at <http://www.statcan.ca/english/ads/71F0004XCB/index.htm>

The **Labour Force Historical Review on CD-ROM** (catalogue no. 71F0004XCB) is available for only \$209. In Canada, please add either GST and applicable PST or HST. Shipping charges: No shipping charges for delivery in Canada. For shipments to the United States, please add \$6. For shipments to other countries, please add \$10.

To order the CD ROM, CALL 1 800 267-6677, FAX 1 877 287-4369 or MAIL your order to: Statistics Canada, Finance, 6-H, R.H. Coats Building, Tunney's Pasture, Ottawa, Ontario K1A 0T6

You may also order by E-MAIL: [infostats@statcan.ca](mailto:infostats@statcan.ca)



# Public pensions and work

Ted Wannell

**D**o I have enough money to retire? is a question that older workers have been trained to ask themselves as they consider the transition out of the workplace. The financial tally includes employer pension plans, registered savings plans and other investments, as well as entitlement to public pension benefits—the Canada and Quebec Pension Plans (C/QPP) and Old Age Security/Guaranteed Income Supplement (OAS/GIS). These resources are balanced against projected spending and other considerations, such as health, family demands and leisure activities.

*Do I really want to retire?* is the question that more and more employers and policy analysts may want workers to consider. With tight labour markets and baby boomers entering the transitional years, impediments to remaining on the job are receiving increased attention. Mandatory retirement is largely being written out of provincial labour codes, and the federal government is proposing adjustments to registered pension plan legislation that would facilitate phased retirement. Labour market factors may also influence employers to adopt more senior-friendly policies, such as leave for eldercare and flexible working hours.

Indeed, a long-term trend toward earlier retirement faltered in the late 1990s and the median retirement age began to inch upward. Similarly, the labour market participation rates of older men turned a corner in the mid 1990s, while the participation rates of older women continued to climb unabated. Apparently changes are afoot.

Although research on the retirement process is growing by leaps and bounds, some gaps in knowledge persist. Studies that integrate the many factors involved in the retirement process are hampered by the lack of a dedicated aging survey in Canada. Several proposals are currently with funding agencies to fill that gap. Yet

---

*Ted Wannell is with the Labour and Household Surveys Analysis Division. He can be reached at 613-951-3546 or [ted.wannell@statcan.ca](mailto:ted.wannell@statcan.ca).*

## Data source and definitions

The **Longitudinal Administrative Databank (LAD)** is based on a 20% sample of T1 tax records covering a 22-year period ending in 2004 at the time of this analysis. Records are linked over time for individuals, and each year's information is used to ascertain the current family structure.

The study uses three-year mini-panels. Each panel consists of a start year identifying those with employment or RPP income, a mid-year to track take-up of C/QPP benefits, and a following year to capture new income patterns. More precisely, the mini-panels are selected according to the following criteria:

- aged 60 to 69 in the middle year
- no C/QPP benefits in the start year
- positive employment or RPP income in the start year
- no disability deduction in the first two years
- C/QPP and RPP receipts do not fall between the second and third years

Three mini-panels were drawn to examine long-term trends: 1994 to 1996, 1999 to 2001, and 2002 to 2004.

even a dedicated survey may not be the best instrument to examine some issues. Sample surveys typically cannot provide consistent estimates of relatively rare events, such as taking up a pension, for small populations. However, both public and employer pension plans have features that are best assessed by examining single years of age: take-up rates at initial eligibility or interaction effects between public and private pensions.

This study uses a large sample of tax data to examine the take-up rate of C/QPP benefits, the co-receipt of C/QPP and other benefits, and employment following benefit take-up. The focus will be on taxfilers in their 60s, since this is the age range of eligibility for C/QPP retirement benefits. The first goal is to establish take-up patterns by age and to determine whether the patterns have changed over time. The database also follows individuals over time, allowing post-pension work patterns to be inferred by receipt of employ-

ment or self-employment income. Since work patterns should vary according to the trajectory into retirement and may be affected by features of the pension programs themselves, the population is divided into groups whose behaviour should vary.

## Public pensions

Economists use life-cycle models to explain work patterns by age. In the absence of pension plans and with a preference for leisure over work, individuals save from earnings until their accumulated wealth can support projected lifetime expenditures; then they retire. Since people differ in earnings, spending and savings rates, retirement should be spread out smoothly across the older age ranges.

In reality, much of the saving takes place in employer and government pension plans. Collection of benefits is based on formulas that tend to concentrate retirement at specific points determined by eligibility requirements. For example, a previous study on registered pension plan (RPP) take-up among workers in their 50s found a distinct peak at age 55, the age at which several large plans begin to offer unreduced benefits (Wannell 2007). These early pensioners had much higher than average pre-pension earnings and low-intensity paid work patterns following receipt of pension benefits. These results suggest that RPP eligibility rules create a pent-up demand for retirement, particularly among high-earnings workers. Overall, roughly one-fifth of workers begin to collect RPP benefits before they become eligible for C/QPP retirement benefits at age 60.

The Canada and Quebec Pension Plans are mandatory for almost all employees and are funded by employer and employee contributions. C/QPP contributions and benefits are designed to replace up to 25% of a benchmark earnings indicator—the average industrial wage—assuming retirement at age 65 and an adequate contribution history. The earnings replacement rate for those earning more than this benchmark—\$41,100 in January 2005—would thus be less than 25% (Social Development Canada 2005a).

C/QPP changes in 1987 gave contributors more choice in timing their retirement. Although 65 remains the benchmark age for benefit calculation, benefits can be commenced earlier or later, with penalties or premiums designed to equalize the lifetime value of benefits received. Contributors can collect benefits as soon as 60 with a 30% penalty or as late as age 70 with a 30% premium.

Given the healthy financial situation of typical young RPP recipients and their weak attachment to the workforce, they should have a high take-up rate of C/QPP at age 60 and further reduce their paid work. Workers with RPPs who did not retire in their 50s should also have higher early take-up rates and subsequently work less than similar workers without RPPs because of the wealth locked in their employer pensions.<sup>1</sup>

However, another program effect of the C/QPP may be an impediment to post-benefit work. Unlike RPPs, the C/QPP requires contributors aged 60 to 64 not to work at any job during the month in which they first collect benefits. Although this provision does not apply to those who earn less than the monthly maximum benefit, this period of unemployment may help some pensioners sever ties to the job market.<sup>2</sup> So all else equal, workers retiring with C/QPP benefits may be less likely to re-enter the job market compared with those receiving RPP benefits only.

Old Age Security and the Guaranteed Income Supplement constitute the other public pillar of income support for seniors. OAS benefits are based on length of residence in Canada, while the GIS is specifically targeted at low-income seniors. For well-paid workers with a lengthy contribution record to the C/QPP, the GIS will not come into play, and the OAS entitlement is equivalent to a significant boost in wealth. This adds another powerful incentive for these workers to further reduce their labour market participation at age 65.

Other features of the OAS and GIS may have more specific effects for high- and low-income seniors. Unlike the C/QPP, both programs are means-tested—benefits are clawed back when income exceeds set thresholds (Social Development Canada 2005b). GIS benefits are reduced by 50 cents for every dollar of income above the threshold (\$13,464 for singles in the last quarter of 2004). OAS benefits are clawed back at 15 cents for every dollar past its threshold (\$59,790 for singles in 2004). These features increase the effective tax rate on employment earnings for those in the shoulder ranges, likely reducing their work incentive relative to other seniors.

Interaction between the C/QPP and the GIS could hasten the retirement of older, low-income workers (Guillemette 2004). For some workers, extending their C/QPP contribution period past age 60 could reduce their eventual GIS entitlement. For this group, continuing to work adds little to their lifetime income relative to previous work. Thus some may choose to



retire even though it does result in an immediate and ongoing drop in income. Since co-receipt of C/QPP benefits and the GIS is fairly common, this effect is potentially non-trivial.

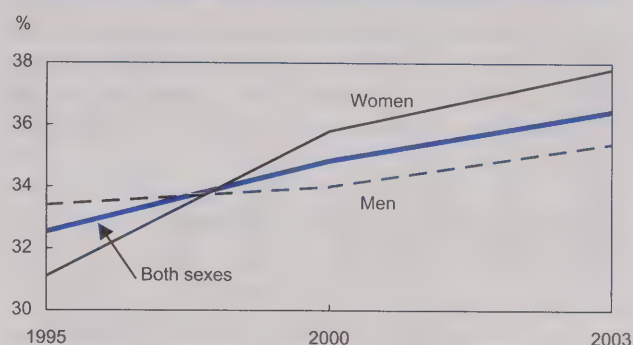
The retirement decision is obviously complex. Studies that explore the program effects mentioned above typically use simulation studies of hypothetical individuals (Pollock and Sargent 2004) or models based on estimated pension/wealth accrual (Baker, Gruber and Milligan 2001). The intention of this paper is not to formally test such program effects. Rather, it describes the uptake and receipt of program benefits by various individual characteristics, as well as employment earnings following benefit receipt.

The focus is on take-up of C/QPP benefits by four groups for whom take-up incentives should differ: those with RPP income only, RPP and employment income, employment income only and current RPP coverage, and employment income only and no current RPP coverage.

### C/QPP early take-up rates increasing

The changes to the C/QPP in 1987 allowed more flexibility in the timing of retirement. An increasing proportion of workers are choosing to take their benefits at age 60, the earliest possible. From 1995 to 2003, take-up at age 60 increased by almost 4 percentage points, from 32.5% to 36.4% (Table 1). The increase was greater for women (6.7 percentage points) than for men (2.0) (Chart A).

**Chart A More women taking up C/QPP benefits at age 60**



Source: Statistics Canada, Longitudinal Administrative Databank

Although the single-year retirement rate is still highest at age 65, the base population in each cohort has been greatly diminished by retirement between 60 and 64. As a result, more than twice as many people retired at age 60 in 2003 as retired at age 65 (data not shown).<sup>3</sup>

The take-up rates at older ages generally declined over the period, although there was a distinct dip in 2000 for nearly every subgroup, followed by a partial recovery by 2003.<sup>4</sup>

Single-year take-up rates can also be used to calculate the cumulative proportion of a cohort that would take up benefits if exposed to the period-specific rates as they aged. This is similar to the method of constructing life expectancy based on cross-sectional mortality rates (see Wannell 2007). Since the trough in single-year take-up rates creates a corresponding dip in the cumulative rates, 1995 to 2003 changes should be more indicative of long-term trends. These data indicate that the trend to retirement at age 60 has been offset by lower take-up rates at ages 61 to 64, such that a smaller proportion had retired by age 65 in 2003 than in 1995 (Chart B). This suggests a polarization in C/QPP take-up, whereby an increasing proportion are col-

**Table 1 C/QPP take-up rates by age and sex**

	1995			2000			2003		
	Both sexes	Men	Women	Both sexes	Men	Women	Both sexes	Men	Women
<b>Age</b>	<b>%</b>								
60	32.5	33.4	31.1	34.8	34.0	35.8	36.4	35.4	37.8
61	19.3	18.8	19.9	14.0	13.2	15.1	17.9	17.4	18.7
62	16.1	15.7	16.6	12.0	11.2	13.3	12.8	12.3	13.4
63	17.0	17.0	17.0	11.4	10.6	12.6	12.4	12.1	12.8
64	17.7	17.5	18.0	12.6	12.1	13.7	13.3	12.9	13.9
65	80.2	83.5	75.2	76.8	78.1	75.0	78.0	78.4	77.3
66	46.0	57.8	35.0	15.6	17.6	14.6	42.7	48.5	36.6

Note: Had employment or RPP earnings in previous year.

Source: Statistics Canada, Longitudinal Administrative Databank

lecting benefits at age 60 while a much smaller, but growing proportion is delaying take-up until after age 65.

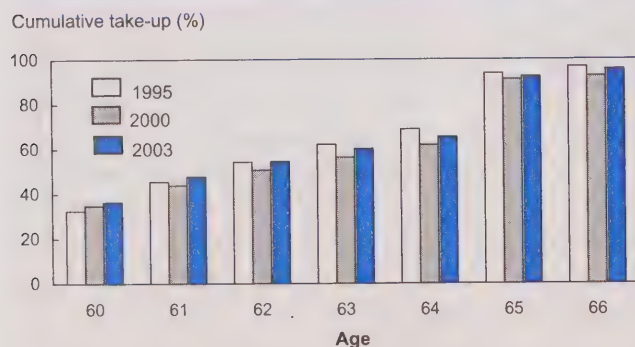
Despite the premium for delaying C/QPP take-up past age 65, less than 1 in 10 do so. Apparently the effect of other forms of wealth accumulation (RPPs, OAS/GIS eligibility, RRSP savings) has a greater impact on the retirement decision than the C/QPP late retirement premium.

### Private pension benefits increase early C/QPP take-up

The hypothesis that having RPP income generates a pent-up demand for early C/QPP take-up receives strong support from the data. Nearly 4 in 5 RPP beneficiaries with no employment in 2002 began receiving C/QPP benefits at age 60 in 2003—the highest rate of all the groups (Chart C). This was also the only group where the take-up rate at age 60 exceeded the rate at age 65 (data not shown). The proportion was somewhat less among those combining work and RPP benefits: 3 in 5 began collecting C/QPP at age 60.

Those who were working and not collecting RPP benefits were much less likely to commence their C/QPP benefits at age 60. Somewhat surprisingly, those without RPP coverage in their current job were more likely to start benefits at age 60 than those with RPP coverage: 26.4% compared with 17.0%. This result is most likely related to selection effects.<sup>5</sup> For example, those with a preference for leisure, with greater wealth, or

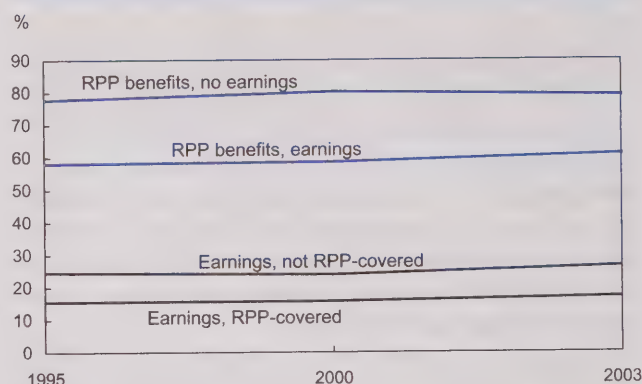
**Chart B C/QPP take-up at age 60 has gone up, but so has take-up after 65**



Note: Had employment or RPP earnings in previous year.

Source: Statistics Canada, Longitudinal Administrative Databank

**Chart C C/QPP take-up at age 60 more than double for those with RPP benefits**



Source: Statistics Canada, Longitudinal Administrative Databank

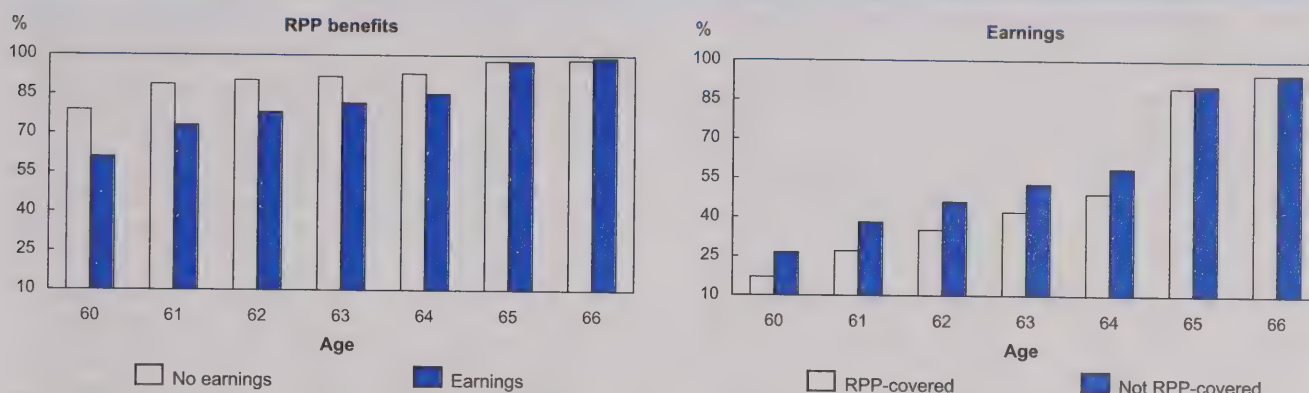
with accumulated pension benefits would have commenced RPP benefits before their 60<sup>th</sup> birthday, leaving those relatively less likely to retire for these reasons in the workplace.

The increasing trend to collect C/QPP benefits at age 60 was dampened by those with earnings but no RPP benefits. The proportion in each group grew by 1 or 2 percentage points between 1995 and 2003. Because of the much higher incidence of C/QPP take-up at age 60, the cumulative C/QPP take-up for those already receiving RPP benefits remained much higher than for those without RPP income until age 64 (Chart D). High take-up rates among all groups at ages 65 and 66 significantly narrowed but did not close the gap. By age 66, less than 1 in 50 RPP beneficiaries had not begun receiving C/QPP compared with about 1 in 20 non-beneficiaries.

### Widespread increases in employment among 60-somethings

As noted earlier, the Labour Force Survey has documented a trend to increasing labour market participation among older workers beginning in the late 1990s. The LAD data verify this trend using earnings-based measures of labour market participation. The data also indicate that the increase in paid work occurred in all groups—before or after starting C/QPP payments, with or without RPP benefits.



**Chart D Cumulative C/QPP take-up rates in 2003 much higher for RPP recipients until age 64**

Source: Statistics Canada, Longitudinal Administrative Databank

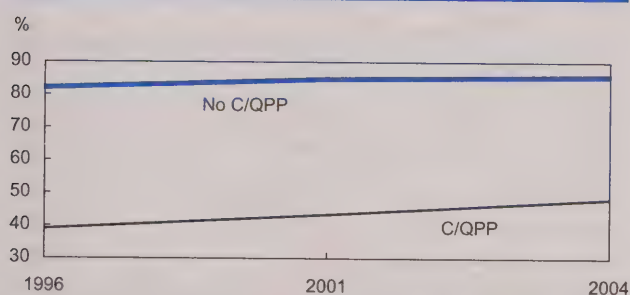
The mini-panels (see *Data source and definitions*) enable paid work in the third year (measured by the presence of employment income) to be related to characteristics or activities from the previous two years. The clearest distinction in work patterns is between those who did and did not begin collecting C/QPP in the middle year. Obviously, the decision to stop working and start collecting benefits should suppress subsequent labour market participation—and it does. Employment rates are nearly double among those who did not start C/QPP benefits the previous year compared with those who did (Chart E). Nevertheless, a substantial and increasing proportion of C/QPP beneficiaries are doing some work for pay the year following their

‘retirement.’ Indeed, the incidence of paid work increased much faster among C/QPP pensioners than among non-pensioners.

Women were less likely to work for pay than men in each group in each period (Table 2). Over time, the gap narrowed among non-beneficiaries. Among C/QPP recipients, rapid employment gains by men widened the gap even though employment gains were substantial for women as well.

### Employment rate increasing regardless of RPP coverage

Among the three groups who were working and did not start C/QPP benefits in the reference year, employment levels remained very high the following year. The employment rate was highest among those

**Chart E The incidence of earnings increased more among C/QPP recipients**

Source: Statistics Canada, Longitudinal Administrative Databank

**Table 2 Persons with earnings by C/QPP status**

	1996	2001	2004
<b>Men</b>			
Did not start C/QPP	85.7	88.0	87.8
Started C/QPP	39.8	45.4	49.9
<b>Women</b>			
Did not start C/QPP	76.8	80.3	82.8
Started C/QPP	37.7	40.7	45.8

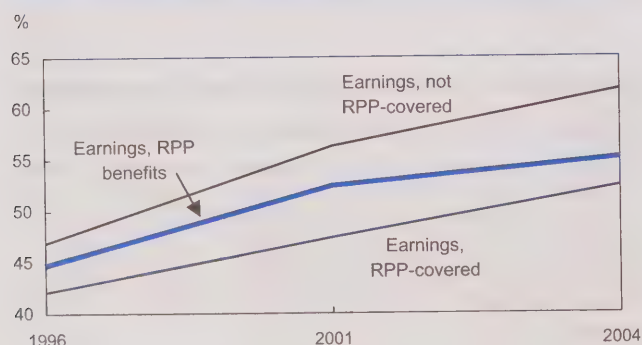
Source: Statistics Canada, Longitudinal Administrative Databank

with RPP coverage in their current job, followed by those working without RPP coverage, and finally those combining earnings and RPP benefits. Each of these groups also showed some growth in employment rate between 1996 and 2004.

Very few workers who started a period with RPP benefits and no employment earnings were working at the end of the period. The movement into employment was greater among those who started to collect C/QPP, although the rate was also increasing for those with or without C/QPP benefits.

Among those who worked at the start of each period and began C/QPP benefits in the middle year, at least 4 in 10 continued with some level of employment in the third year. And this post-benefit employment increased by at least 10 percentage points between 1996 and 2004 (Chart F). The incidence of continuing employment was highest and increased the most for those without RPP benefits or RPP coverage in the first year. Their situation indicates relatively weak retirement resources, so it is not surprising that many continued to work after starting C/QPP benefits. What is perhaps more surprising is that by 2004, the majority of those who started the period in RPP-covered jobs or by combining work and RPP benefits continued to do some paid work while collecting C/QPP benefits. Even those with multiple sources of pension income are contributing to the trend to more paid work among 60-somethings.

**Chart F The proportion of employed C/QPP pensioners has increased**



Source: Statistics Canada, Longitudinal Administrative Databank

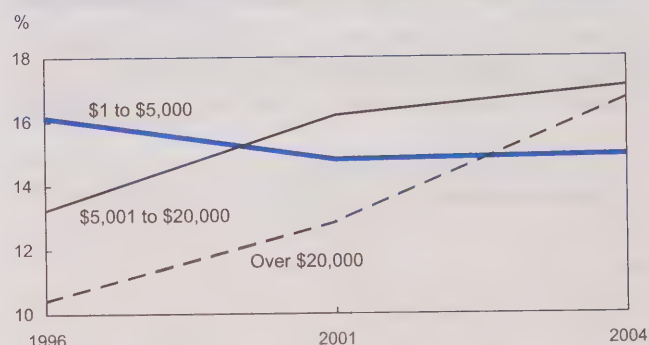
### Work intensity of C/QPP recipients increasing

An earlier study found that more than half of those who began receiving RPP benefits in their 50s did some work the year following 'retirement,' but work intensity was relatively low (Wannell 2007). Although the incidence of work grew among this group from 1996 to 2004, most of the growth was at the lowest level of intensity (less than \$5,000).

The overall incidence of work among new C/QPP recipients was somewhat lower than among their younger counterparts at each time point but was growing faster, particularly at higher levels of intensity (Chart G). Those earning more than \$20,000 accounted for just over a quarter of employed new C/QPP recipients in 1996. By 2004, they made up more than a third of a much larger pool of working pensioners. The 16.7% of new C/QPP pensioners who earned more than \$20,000 in 2004 nearly equalled the proportion of 50-something new RPP recipients (17.3%) who surpassed that benchmark.

Prior receipt of RPP benefits had a large effect on work intensity among new C/QPP recipients (Chart H). Those who were already receiving RPP benefits were much less likely to be earning more than \$20,000 in 2004 (14.6%) than those who had been working in a job without RPP coverage (23.5%). Those who had worked at a job with RPP coverage were in the middle at 20.4%. Thus work intensity among C/QPP

**Chart G Work intensity has increased among C/QPP pensioners**



Note: Zero earnings (not working) excluded.

Source: Statistics Canada, Longitudinal Administrative Databank



## The Guaranteed Income Supplement and employment

The GIS is a means-tested social transfer for low-income seniors. Approximately one-third of those aged 66 to 70 receive at least some benefits. Once recipients pass a family income threshold based on the number, age and pension status of family members, benefits are clawed back at a rate of 50 cents for each dollar of additional income. Since other benefits for seniors (such as public-housing subsidies) may also be means-tested, additional income may result in very little additional spending power for GIS recipients (Shillington 2003). These clawbacks may well be a strong disincentive—except for those already near the upper limit—to seek paid work.

Among 66 to 70 year-olds, GIS recipients are only about one-third as likely to work for pay as those receiving other public pension benefits but no GIS. The work gap between GIS recipients and non-recipients is greater among women than men. As with most groups examined in this study, the incidence of paid work increased among GIS recipients from 1996 to 2004.

### Paid employment among public pension recipients

	1996	2001	2004
<b>Men with earnings</b>			
	%		
C/QPP and/or OAS, no GIS	25.8	28.8	31.9
Receiving GIS	8.9	10.8	11.2
<b>Women with earnings</b>			
C/QPP and/or OAS, no GIS	14.7	16.4	18.8
Receiving GIS	3.1	4.1	4.8

Note: Includes 66 to 70 year-olds not claiming the disability deduction.

Clawbacks are not the sole reason for the low employment rates of GIS recipients. Low education, declining health and an intermittent employment history may also contribute. For example, those who received the GIS at age 65 were less likely to be working at age 64 than other public pension recipients. Again the gap is greater among women.

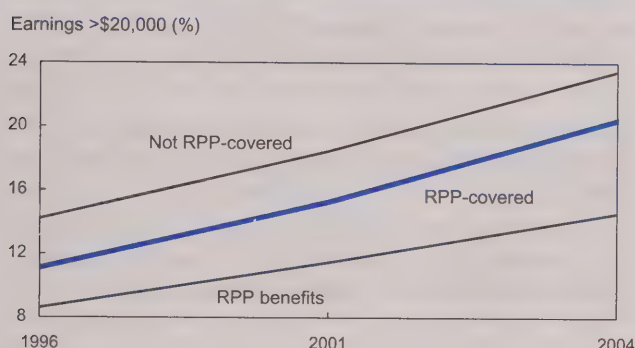
Clearly, a substantially smaller proportion of GIS recipients had recent work experience. Since the lack of recent experience may affect employability, the ratio of employment rates before and after age 65 may be a more valid comparison. Given employment at age 64, GIS recipients were still about half as likely as non-recipients to continue working after age 65. This gap was similar for men and women.

### Who was working at age 64?

	1995	2000	2003
<b>Men, at age 65</b>			
	%		
C/QPP and/or OAS, no GIS	50.0	47.9	50.0
Receiving GIS	28.1	27.7	27.7
<b>Women, at age 65</b>			
C/QPP and/or OAS, no GIS	35.3	33.3	34.9
Receiving GIS	13.7	12.7	14.3

Note: Includes 64 year-olds not claiming the disability deduction.

**Chart H Work intensity among C/QPP recipients strongly influenced by private pension status**



Source: Statistics Canada, Longitudinal Administrative Databank

recipients seems to be related to financial circumstances. Those without the financial backing of an RPP or those with an RPP who could not afford to retire early tended to work more.

## Summary

The primary goal of this analysis was to document patterns in the take-up rate of C/QPP benefits and employment following C/QPP take-up. Antecedent receipt of RPP benefits was of particular interest since this potentially represents a pent-up demand for C/QPP benefits at age 60. The recent increase in labour force participation among older age groups makes these issues particularly timely.

About one-third of those working for pay at age 59 began to collect C/QPP benefits when they first became eligible at age 60. The take-up rate then drops for ages 61 to 64, spiking to a peak above 75% at age

65 when most people also become eligible for Old Age Security benefits. Despite this spike in the rate at age 65, more people, in absolute terms, began collecting C/QPP at age 60 since the eligible population was larger.

Two time trends are notable in relation to C/QPP take-up. First, the proportion beginning receipt at age 60 is increasing over time—more so for women than for men. Second, the cumulative proportion of a cohort that starts benefits by age 65 is edging down. This result is somewhat clouded by a trough in take-up rates at some ages in the year 2000.

The early take-up of C/QPP benefits is not evenly distributed. Those who were already receiving RPP benefits at age 59 were far more likely to start C/QPP benefits the following year, especially if they were not still working. Counter to expectations, those in jobs with RPP coverage were less likely to start their public pension benefits at 60 than those without RPP coverage. Still, this difference was small compared with the gulf that separated these two groups from those already receiving RPP benefits.

The rise in paid work among 60-somethings crosses all groups examined: men and women, before and after starting C/QPP benefits, and with and without RPP benefits. Even those who received RPP benefits at age 59 and did not work are increasingly finding their way back into paid jobs in their 60s. Paid work is most prevalent and intense for those not covered by an RPP in their last job before retiring, and it is also increasing significantly.

Overall, the supply and demand factors related to older workers seem to be moving in the direction desired by many commentators: toward longer careers. However, even with the large sample sizes from the LAD, the data quickly thin out when examining groups of particular interest to policy analysts. As such, multivariate methods would be much better suited to more closely assess the work incentives or disincentives of public pension programs.

### Perspectives

#### Notes

1 Although workers without RPPs could compensate by saving more than those with RPPs, a recent study concluded that registered retirement savings did not differ between the two groups after controlling for income and personal characteristics (Palameta 2001).

2 Pollock and Sargent (2004) used simulation techniques to estimate that removal of the stop work requirement could extend working careers by two to four years.

3 Comparisons for the same birth year cohort reveal similar, though slightly dampened patterns—58% more 60 year-olds in 1995 than 65 year-olds in 2000 started receiving C/QPP benefits.

4 Rates for ages 67 to 69 have been suppressed because of small sample sizes.

5 Since membership in an RPP is derived from a non-zero pension adjustment (PA) on the tax file, individuals who extend their careers for more than a year beyond the contributory period of their RPP will be misclassified.

#### References

- Baker, Michael, Jonathan Gruber and Kevin Milligan. 2001. *The Retirement Incentive Effects of Canada's Income Security Programs*. National Bureau of Economic Research Working Paper no. 8658. Cambridge, Mass. 48 p.
- Guillemette, Yvan. 2004. *Follow Quebec's Lead: Removing Disincentives to Work after 60 by Reforming the CPP/QPP*. C.D. Howe Institute Commentary, no. 199. May. 19 p.
- Milligan, Kevin. 2005. *Making It Pay to Work: Improving the Work Incentives in Canada's Public Pension System*. C.D. Howe Institute Commentary, no. 218. October. 21 p.
- Palameta, Boris. 2001. "Who contributes to RRSPs? A re-examination." *Perspectives on Labour and Income*. Vol. 13, no. 3. Autumn. Statistics Canada Catalogue no. 75-001-XPE. p. 7-13.
- Pollock, Allan and Timothy C. Sargent. 2004. *Retirement Behaviour and the CPP: A Simulation Model*. Department of Finance Canada Working Paper no. 2004-08. 31 p.
- Shillington, Richard. 2003. *New Poverty Traps: Means-Testing and Modest Income Seniors*. C.D. Howe Institute Backgrounder, no. 65. April. 11 p.
- Social Development Canada. 2005a. *Canada Pension Plan: Retirement Pension*. Catalogue no. SD12-1/1-2005E. Ottawa. 34 p.
- Social Development Canada. 2005b. *Income Security Programs Information Card*. October to December 2004. Catalogue no. ISPB-258-10-04E. Ottawa. 2 p.
- Wannell, Ted. 2007. "Young pensioners." *Perspectives on Labour and Income*. Vol. 19, no. 1. Spring. Statistics Canada Catalogue no. 75-001-XPE. p. 45-54.



# What's new?

## *Recent reports and studies*

### ■ FROM STATISTICS CANADA

#### ■ *Persistence of low income among working-aged unattached individuals*

Although unattached individuals under 65 made up just 11% of the Canadian population in 2005, they represented over a third of those in low income that year. As well, they accounted for 47% of those in low income for six consecutive years.

People living alone were more likely than those in economic families to be in low income persistently, even when age, visible-minority status, educational attainment, work status, and work-limitation status were taken into account.

For more information, see the June 15, 2007 issue of *The Daily* on the Statistics Canada's Web site ([www.statcan.ca](http://www.statcan.ca)).

#### ■ *Labour productivity*

The year 2007 opened on a solid note for productivity in the Canadian business sector. Between January and March, quarterly labour productivity growth accelerated to 0.7%, more than three times the pace in the previous quarter (+0.2%).

Hours worked, on the other hand, increased at a more moderate pace. This surge in productivity in the first quarter of 2007 was the largest gain since the 1.0% recorded in the third quarter of 2005.

Both the services-producing and the goods-producing industries made positive contributions to the overall productivity performance in the first quarter. Gains were observed in manufacturing, construction, agriculture, forestry, fishing and hunting as well as in wholesale and retail trade, and finance and insurance services.

In the United States, quarterly productivity growth in the business sector remained lacklustre. With a slowdown in economic activity, American productivity increased only 0.1% between January and March, a slower growth than in the fourth quarter of 2006.

For more information, see the June 12, 2007 issue of *The Daily* on the Statistics Canada's Web site ([www.statcan.ca](http://www.statcan.ca)).

#### ■ *Income of individuals*

The median total income of individuals amounted to \$25,400 in 2005, up 1.9% from 2004 after adjusting for inflation. This is the largest annual increase since 2001.

Among census metropolitan areas, the largest percentage increases were in Edmonton (4.2%), followed by Saskatoon (3.3%), Calgary (3.2%) and Trois-Rivières (3.0%).

Median employment income in Canada increased 1.3% to \$26,300 in 2005. The Northwest Territories continued to have the highest median employment income at \$37,500, up 3.7% from 2004; Yukon had the second highest at \$30,000 (+3.8%), followed by Alberta at \$29,500 (+5.0%).

For more information, see the May 31, 2007 issue of *The Daily* on the Statistics Canada's Web site ([www.statcan.ca](http://www.statcan.ca)).

#### ■ *Family income*

Couple families in Ottawa-Gatineau had the highest median total income (\$86,100) among all census metropolitan areas (CMA) in 2005. Oshawa, which led for the two previous years, followed with a median of \$85,400.

Nationally, the median rose 2.1% to \$67,600 in 2005, after adjusting for inflation.

Among CMAs, the largest percentage increases were observed in Edmonton (4.6%), followed by Calgary (4.2%) and Greater Sudbury (3.8%).

For more information, see the May 29, 2007 issue of *The Daily* on the Statistics Canada's Web site ([www.statcan.ca](http://www.statcan.ca)).

### ■ ***Impact of immigration on labour markets in Canada, Mexico and the United States***

Immigration has tended to lower wages in both Canada and the United States. However, the impact of immigrants on the wages of domestic workers depends to a large extent on the skill mix of the newcomers.

A significantly higher proportion of immigrants to Canada are highly skilled. In 2001, around 4 in 10 individuals with more than an undergraduate degree were immigrants in Canada compared with about 1 in 5 in the United States. This tended to curtail the earnings growth of the most-educated Canadians relative to the least-educated.

In the United States, however, the opposite has happened. There, newcomers have depressed the earnings of low-paid Americans and increased the gap relative to the highest-paid.

Between 1980 and 2000, immigration increased the male labour force by 13.2% in Canada and 11.1% in the United States. However, Mexico experienced a 14.6% loss in the size of its potential male workforce.

For more information, see the May 25, 2007 issue of *The Daily* on the Statistics Canada's Web site ([www.statcan.ca](http://www.statcan.ca)).

### ■ ***Service offshoring and employment***

No clear evidence shows that occupations potentially subject to service offshoring displayed less employment growth than other occupations in recent years.

Furthermore, there is little evidence that employment in these occupations grew at a slower rate in industries that experienced substantial increases in service offshoring to non-OECD countries than in similar occupations located in other industries.

For more information, see the May 22, 2007 issue of *The Daily* on the Statistics Canada's Web site ([www.statcan.ca](http://www.statcan.ca)).

### ■ ***Income inequality and redistribution***

Inequality in after-tax family income has increased during the past 15 years, driven by widening differences in market income—the sum of employment earnings, net self-employment income, investment income and private retirement income for all family members.

On the other hand, while the tax-transfer system changed in many ways during the 1990s, it reduced income inequality by as much in 2004 as it did in 1989.

The trend in family market-income inequality does not appear to be primarily driven by rising differences in earnings among workers. It appears to be driven in part by increased inequality in family earnings. This would suggest that changing family characteristics, such as the increasing share of families with two highly educated earners, may be important.

For more information, see the May 11, 2007 issue of *The Daily* on the Statistics Canada's Web site ([www.statcan.ca](http://www.statcan.ca)).

## ■ **FROM OTHER ORGANIZATIONS**

### ■ ***Exporting and FDI with endogenous productivity***

This paper analyzes how a firm's decision to serve a foreign market by exporting or by engaging in foreign direct investment (FDI) affects its productivity, when productivity is endogenous as a function of training. With endogenous productivity, exporting results in lower productivity than does FDI, but exporting may result in higher or lower employment and output than does FDI. Also, FDI has lower employment, higher training, higher wages and higher productivity than does production for the home market. Exporting results in the same level of training and productivity as production for the home market. However, under the same demand conditions, exporting firms employ less labour for foreign production than for home production and, consequently, output for the foreign market is lower than for the home market. See *Exporting and FDI with Endogenous Productivity* by Oana Secieru and Marianne Vigneault, Bank of Canada, working paper 2007-14, March 2007, <http://www.bank-banque-canada.ca/en/topic/index.html>



### ■ **Overemployment mismatches: the preference for fewer hours**

While workers' preferences regarding work hours are not directly observable, restrictions on the choice of hours of work in a given job are widely acknowledged as a central feature of the labour market and, in many conventional economic studies, of labour supply. For this article, overemployment occurs when desired hours of labour supply fall short of the hours demanded at their current pay rate. This article identifies empirically the demographic and job factors associated with being 'overemployed,' and how willing employees may be to reduce hours of work at their current (or suitable alternative) job for less income. Unlike previous studies of hours constraints, the focus here is less on underemployment—the desire for more hours and income—even though underemployment is more common and may be more adverse to worker welfare. However, overemployment has considerable spillover (hidden) social costs. Facilitating a reduction in overemployment may potentially reduce the extent of underemployment, at least in sectors and workplaces where they co-exist. See "Overemployment mismatches: the preference for fewer hours" by Lonnie Golden and Tesfayi Gebreselassie, *Monthly Labor Review Online*, April 2007, Vol. 130, no. 4, U.S. Department of Labor, Bureau of Labor Statistics, <http://www.bls.gov/opub/mlr/2007/04/contents.htm>.

### ■ **Wage differentials associated with working at home**

This article presents an empirical test of wage differentials associated with working at home by frequency, stated reason, industry, major occupation, and sex of the worker. The test potentially reflects several factors, including hedonic differentials,

productivity effects, and risk sharing. The analysis presented quantifies such differentials; previous studies have not done so, although they have explored factors underlying the choice to work at home, the impact of working at home on travel and congestion, and other related issues. See "Wage differentials associated with working at home" by Bonnie Sue Gariety and Sherrill Shaffer, *Monthly Labor Review Online*, March 2007, Vol. 130, no. 4, U.S. Department of Labor, Bureau of Labor Statistics, <http://www.bls.gov/opub/mlr/2007/03/contents.htm>.

### ■ **Employment dynamics: small and large firms over the business cycle**

Who creates the most jobs: small businesses or large businesses? This subject has been widely discussed among economists and researchers and is often a topic of political debates citing the important role of small businesses in creating jobs. The small- versus large-firm issue is twofold: Do small firms create most of the new jobs, or is their share of net job gains greater than their base share of employment? Economists argue that the answer depends on which methodology is used. New statistics from the Business Employment Dynamics (BED) program of the U.S. Bureau of Labor Statistics (BLS) enable the analysis of many of the size class methodological issues. See "Employment dynamics: small and large firms over the business cycle" by Jessica Helfand, Akbar Sadeghi and David Talan, *Monthly Labor Review Online*, March 2007, Vol. 130, No. 4, U.S. Department of Labor, Bureau of Labor Statistics, <http://www.bls.gov/opub/mlr/2007/03/contents.htm>.

---

#### Perspectives

---

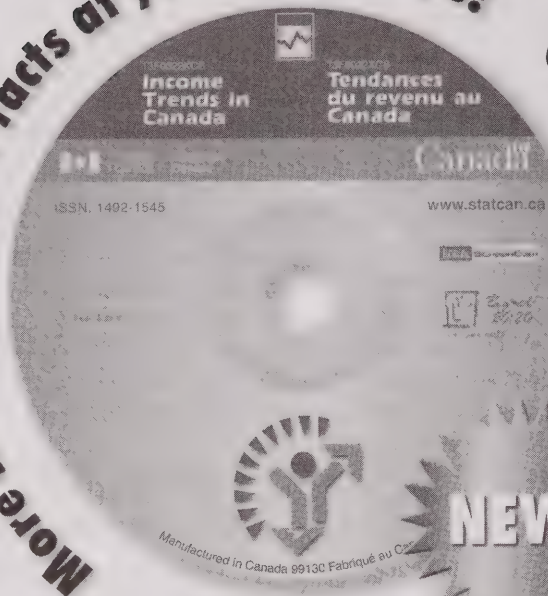
#### **Are you moving?**

Please forward your name, old address, new address, telephone number and client reference number to: Statistics Canada, Finance Division, R.H. Coats Bldg., 6th floor, 100 Tunney's Pasture Driveway, Ottawa, Ontario K1A 0T6; or call 1 800 267-6677 (Canada and United States), fax 1 877 287-4369 (Canada and United States) or e-mail [infostats@statcan.ca](mailto:infostats@statcan.ca).

Please allow four weeks notice to ensure uninterrupted delivery.

# Income Trends in Canada

More than 2,000,000 facts at your fingertips!



**Get the overall picture with nearly two decades of data for Canada, the provinces and 15 metropolitan areas**

For \$209, you will find everything you need to know about income trends going back to 1980, through two recessions and recovery periods! Get accurate and reliable statistics about:

- ▶ income from employment... and other sources
- ▶ taxes
- ▶ impact of government transfers on family income
- ▶ differences in earnings between women and men
- ▶ income of Canada's seniors
- ▶ income inequality and low income
- ▶ and a lot more!

**In these times of rapid change, it is more crucial than ever before to understand income trends of Canadians**

With *Income Trends in Canada*, tracking and understanding developments in Canadian incomes is easy!

Use this CD-ROM to view trends with one mouse click. Create your own tables. Chart income data. And more!

**Need more details?** Check out *Income Trends in Canada* on our Web site at <http://www.statcan.ca/english/ads/72-202-XIE/index.htm> or contact your nearest Statistics Canada Regional Reference Centre at 1 800 263-1136.



## **Order *Income Trends in Canada* TODAY**

(catalogue number 13F0022XCB) for \$209. In Canada, please add **either** GST and applicable PST **or** HST. Shipping charges outside Canada: for shipments to the United States, please add \$6. For shipments to other countries, please add \$10. To order, CALL 1 800 267-6677, FAX 1 877 287-4369 or MAIL: Statistics Canada, Finance, 6-H, R.H. Coats Building, Tunney's Pasture, Ottawa, Ontario K1A 0T6. You may also order by E-MAIL: [infostats@statcan.ca](mailto:infostats@statcan.ca)



# Varia

*In this issue: Unionization*

## PREVIOUS UPDATES

Retirement – Summer 2006  
Minimum wage – Winter 2006  
Work absence rates – Summer 2007  
Gambling – Summer 2007

## ECONOMIC AND SOCIAL INDICATORS

Provincial wealth inequality – Spring 2005  
Tourism – Summer 2005  
Residential construction – Autumn 2005  
Education – Winter 2005  
Personal debt – Spring 2007

## CONTACTS

### Administrative data

*Small area and administrative data*  
Customer Services  
613-951-9720

### Business surveys

*Annual Survey of Manufactures and Logging*  
Client Services  
613-951-9497

*Annual surveys of service industries*  
Patti Dow  
613-951-4612

*Business Conditions Survey of Manufacturing Industries*  
Claude Robillard  
613-951-3507

### Census

*Labour force characteristics*  
Sandra Swain  
613-951-6908

*Income statistics*  
John Gartley  
613-951-6906

### Employment and income surveys

*Labour Force Survey*  
Marc Lévesque  
613-951-4090

*Survey of Employment, Payrolls and Hours*  
Sylvie Picard  
613-951-4003

*Employment Insurance Statistics Program*  
Robert Keay  
613-951-4008

*Major wage settlements*  
Workplace Information Directorate  
(Human Resources and Social Development Canada)  
819-997-3117 or 1 800 567-6866

*Labour income*  
Anna MacDonald  
613-951-3784

*Survey of Labour and Income Dynamics*  
*Survey of Financial Security*  
*Survey of Household Spending*  
Client Services  
613-951-7355 or 1 888 297-7355

### General Social Survey

*Education, work and retirement*  
*Aging and social support*  
*Time use*  
Client Services  
613-951-5979

### Pension surveys

*Pension Plans in Canada Survey*  
Michel Palardy  
613-951-7559

*Quarterly Survey of Trusteed Pension Funds*  
Gregory Sannes  
613-951-4034

### Special surveys

*Adult Education and Training Survey*  
Client Services  
613-951-7608 or 1 800 307-3382

*National Graduates Survey*  
Client Services  
613-951-7608

# Unionization

## Unionization rates in first half of 2006 and 2007

At 14.1 million, average paid employment (employees) during the first half of 2007 was 283,000 higher than during the same period a year earlier (Table 1). On the other hand, union membership increased by 72,000 to 4.2 million. Compared with last year, employment grew less while union membership expanded more. As a result, the unionization rate (density) remained unchanged at 29.7%.

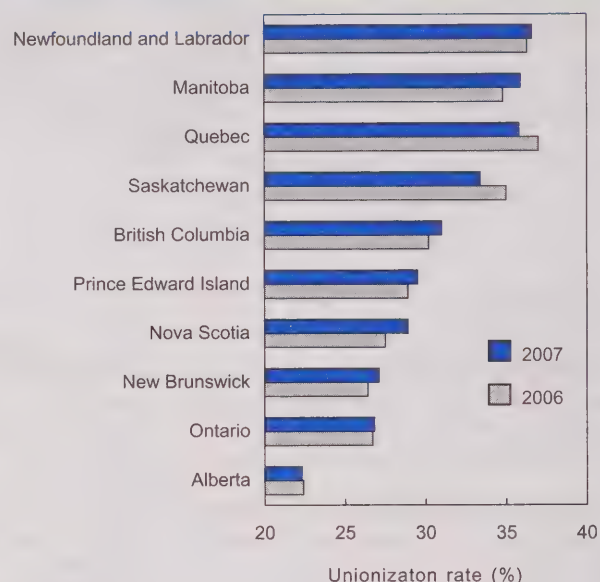
Both men and women registered marginal decreases in unionization rates. At 30.0%, the women's rate in 2007 continued to exceed the rate for men (29.3%).

Unionization rose slightly in the public sector (to 71.7%) but remained the same in the private sector (17.0%).

Seven provinces recorded increases. Decreases were seen in Quebec, Saskatchewan and Alberta (Chart A).

The rate fell from 23.2% to 22.9% for part-time workers and remained unchanged for full-time workers (31.2%).

**Chart A** Newfoundland and Labrador the most unionized province; Alberta, the least



Source: Statistics Canada, Labour Force Survey, January-to-June averages

## Data sources

Information on union membership, density and coverage by various socio-demographic characteristics, including earnings, are from the Labour Force Survey. Further details can be obtained from Marc Lévesque, Labour Statistics Division, Statistics Canada at 613-951-4090.

Data on strikes, lockouts and workdays lost, and those on major wage settlements were supplied by Human Resources and Social Development Canada (HRSDC). Further information on these statistics may be obtained from Client services, Workplace Information Directorate, HRSDC at 1 800 567-6866.

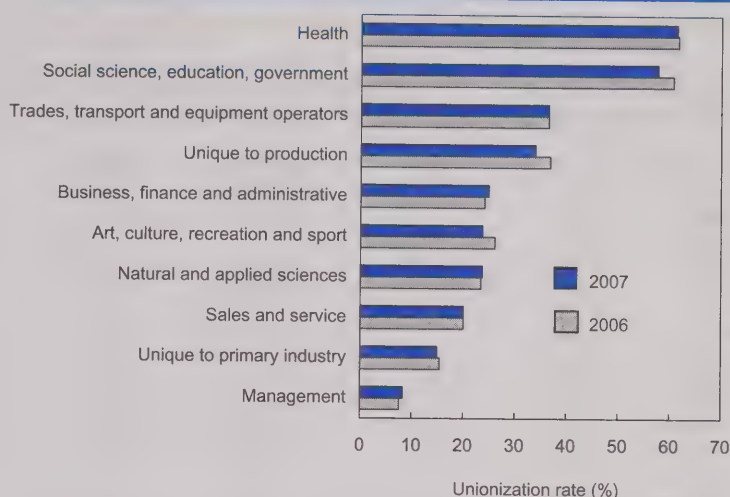


The unionization rate for permanent employees remained at 30.2%, but decreased to 25.8% for those in non-permanent jobs. The rate fell in workplaces with less than 20 employees, and those with 100 to 500, it increased in those with more than 500 employees and those with 20 to 99 employees.

Unionization rose in 8 of the 16 major industry groups: public administration; construction; information, culture and recreation; trade; business, building and other support; other services; finance, insurance, real estate and leasing; and accommodation and food. Professional, scientific and technical remained stable, while all other industry groups registered declines (Chart B).

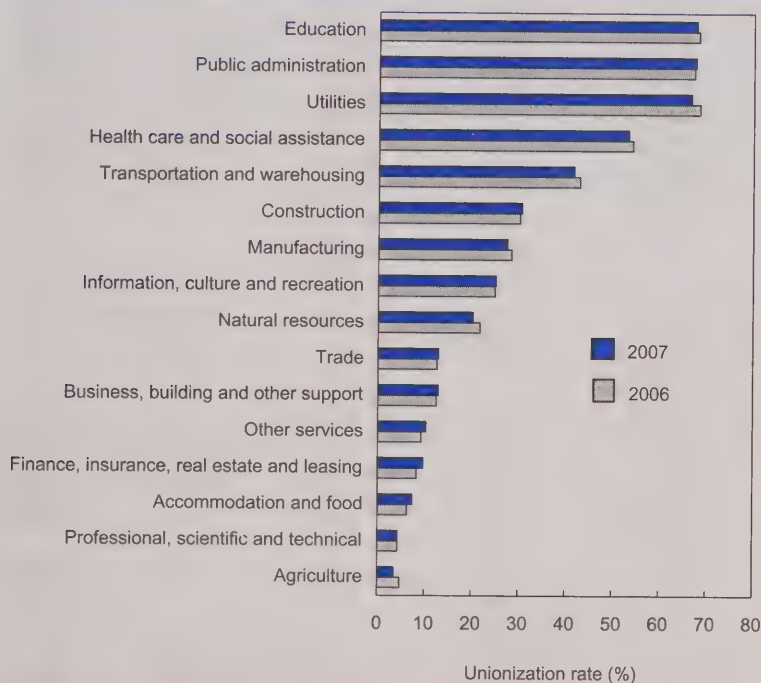
Among the 10 major occupational groups, unionization rose in 3: business, finance and administrative; natural and applied sciences;

**Chart C Unionization in community service occupations far outpaced that in others**



Source: Statistics Canada, Labour Force Survey, January-to-June averages

**Chart B The highest unionization rates were in public-sector industries**



Source: Statistics Canada, Labour Force Survey, January-to-June averages

and management. Trades, transport and equipment operators and sales and services remained stable, while the rest showed declines (Chart C).

The number of employees who were not union members but covered by a collective agreement averaged 308,000, down slightly from 316,000 a year earlier (see Akyeampong 2000 for a description of this group).

Table 1 Union membership and coverage by selected characteristics

	2006			2007		
	Total employees	Union density		Total employees	Union density	
		Members	Coverage <sup>1</sup>		Members	Coverage <sup>1</sup>
	'000	%	%	'000	%	%
<b>Both sexes</b>	<b>13,804</b>	<b>29.7</b>	<b>32.0</b>	<b>14,087</b>	<b>29.7</b>	<b>31.8</b>
Men	6,979	29.4	31.9	7,059	29.3	31.7
Women	6,825	30.1	32.1	7,027	30.0	32.0
<b>Sector<sup>2</sup></b>						
Public	3,229	71.4	75.1	3,257	71.7	75.2
Private	10,575	17.0	18.9	10,830	17.0	18.8
<b>Age</b>						
15 to 24	2,369	13.3	15.5	2,418	13.3	15.0
25 to 54	9,798	32.7	35.1	9,911	32.7	35.0
25 to 44	6,559	29.5	31.9	6,592	29.8	32.1
45 to 54	3,238	39.3	41.6	3,319	38.3	40.7
55 and over	1,638	35.5	37.7	1,758	35.1	37.4
<b>Education</b>						
Less than Grade 9	333	27.6	30.1	323	25.9	27.7
Some high school	1,497	21.9	23.5	1,490	21.1	22.8
High school graduation	2,848	27.1	28.8	2,874	25.8	27.4
Some postsecondary	1,214	21.6	23.7	1,188	20.9	22.9
Postsecondary certificate or diploma	4,799	33.4	35.9	4,937	33.8	36.2
University degree	3,113	33.7	36.7	3,274	34.1	36.9
<b>Province</b>						
Atlantic	931	28.9	30.5	945	29.9	31.2
Newfoundland and Labrador	180	36.3	38.1	187	36.6	38.3
Prince Edward Island	56	28.9	30.2	58	29.5	30.7
Nova Scotia	384	27.5	28.9	386	28.9	30.0
New Brunswick	311	26.4	28.1	314	27.1	28.4
Quebec	3,219	37.0	40.9	3,259	35.8	39.4
Ontario	5,494	26.7	28.4	5,548	26.8	28.5
Prairies	2,394	27.0	29.1	2,516	26.8	28.7
Manitoba	496	34.8	37.5	505	35.9	37.7
Saskatchewan	388	35.0	36.9	405	33.4	35.3
Alberta	1,510	22.4	24.4	1,606	22.3	24.2
British Columbia	1,766	30.2	32.0	1,818	31.0	32.9
<b>Work status</b>						
Full-time	11,276	31.2	33.6	11,483	31.2	33.5
Part-time	2,528	23.2	25.2	2,604	22.9	24.6
<b>Industry</b>						
Goods-producing	3,214	28.8	31.0	3,209	28.2	30.5
Agriculture	129	4.8	5.4	122	3.5	5.1
Natural resources	261	21.7	23.7	285	20.2	22.1
Utilities	119	68.5	72.5	131	66.7	71.2
Construction	685	30.2	32.2	727	30.6	32.8
Manufacturing	2,020	28.4	30.7	1,944	27.5	29.7
Service-producing	10,590	30.0	32.3	10,877	30.1	32.2
Trade	2,313	12.6	14.2	2,355	12.9	14.5
Transportation and warehousing	661	42.9	44.4	673	41.7	43.8
Finance, insurance, real estate and leasing	853	8.3	10.3	877	9.7	11.2
Professional, scientific and technical	717	4.3	5.4	743	4.3	5.5
Business, building and other support	517	12.5	14.8	519	12.9	14.7
Education	1,145	68.3	72.7	1,175	67.8	71.5
Health care and social assistance	1,546	54.2	56.5	1,605	53.3	55.5
Information, culture and recreation	626	24.9	26.9	642	25.1	26.8
Accommodation and food	895	6.3	7.4	961	7.4	8.3
Other	485	9.3	11.1	488	10.3	12.5
Public administration	833	67.3	72.5	839	67.6	72.6



Table 1 Union membership and coverage by selected characteristics (concluded)

	2006			2007		
	Total employees	Union density		Total employees	Union density	
		Members	Coverage <sup>1</sup>		Members	Coverage <sup>1</sup>
Occupation	'000	%	%	'000	%	%
Management	1,013	7.6	10.4	988	8.3	10.9
Business, finance and administrative	2,698	24.1	26.3	2,700	24.9	27.0
Professional	352	14.6	17.3	378	17.2	18.9
Financial and administrative	700	22.5	24.5	685	23.2	25.6
Clerical	1,645	26.7	28.9	1,637	27.3	29.4
Natural and applied sciences	981	23.4	26.1	1,030	23.7	25.8
Health	854	61.7	64.1	864	61.4	63.2
Professional	94	35.6	41.3	101	40.2	45.3
Nursing	264	81.4	83.2	266	81.2	82.9
Technical	211	59.3	60.9	229	56.5	58.0
Support staff	284	53.8	56.4	268	53.8	55.0
Social and public service	1,255	57.6	61.0	1,298	57.7	61.0
Legal, social and religious workers	564	35.8	38.4	589	36.8	40.0
Teachers and professors	690	75.4	79.5	710	75.1	78.4
Secondary and elementary	472	87.1	89.8	478	86.8	89.0
Other	219	50.2	57.2	232	50.8	56.6
Culture and recreation	331	26.1	28.4	301	23.7	26.1
Sales and service	3,444	20.0	21.7	3,674	20.0	21.7
Wholesale	359	6.1	7.4	381	5.4	6.5
Retail	1,013	11.8	12.9	1,062	12.3	13.6
Food and beverage	497	9.2	9.9	561	7.8	8.6
Protective services	215	54.6	60.7	231	54.9	62.0
Child care and home support	164	48.8	51.9	190	45.6	48.7
Travel and accommodation	1,195	25.5	27.3	1,250	26.1	27.7
Trades, transport and equipment operators	1,987	36.5	38.6	2,007	36.5	38.8
Contractors and supervisors	114	27.1	29.6	111	32.3	34.9
Construction trades	254	37.9	40.1	256	37.7	39.9
Other trades	781	38.4	40.4	793	39.6	41.9
Transportation equipment operators	504	38.1	39.9	511	36.3	38.1
Helpers and labourers	334	31.8	34.5	337	29.8	33.2
Unique to primary industry	273	15.4	17.0	277	14.9	16.9
Unique to production	970	36.8	39.4	946	33.9	36.2
Machine operators and assemblers	772	36.5	39.0	751	33.9	36.1
Labourers	198	38.0	41.1	196	33.6	36.5
Workplace size						
Under 20 employees	4,473	13.4	15.0	4,598	13.1	14.7
20 to 99 employees	4,548	29.7	32.2	4,638	30.0	32.3
100 to 500 employees	2,946	41.4	44.0	2,976	41.1	43.8
Over 500 employees	1,837	50.9	53.8	1,874	51.2	53.8
Job tenure						
1 to 12 months	3,147	14.6	17.2	3,341	14.9	17.3
Over 1 year to 5 years	4,361	23.0	25.2	4,448	23.1	25.1
Over 5 years to 9 years	2,194	32.1	34.1	2,206	32.9	35.1
Over 9 years to 14 years	1,278	36.7	38.7	1,308	36.6	38.7
Over 14 years	2,823	52.0	54.5	2,784	51.9	54.4
Job status						
Permanent	12,069	30.2	32.4	12,310	30.2	32.3
Non-permanent	1,735	26.3	29.4	1,777	25.8	28.5

1 Union members and persons who are not union members but covered by collective agreements (for example, some religious group members).

2 Public-sector employees are those working for government departments or agencies; Crown corporations; or publicly funded schools, hospitals or other institutions. Private-sector employees are all other wage and salary earners.

Source: Statistics Canada, Labour Force Survey, January-to-June averages

## 2006 annual averages

Approximately 4.1 million (29.4%) employees belonged to a union in 2006 (Table 2). An additional 320,000 (2.3%) were covered by a collective agreement.

Those in the public sector—government, Crown corporations, and publicly funded schools or hospitals—were four times as likely as their private-sector counterparts to belong to a union (71.0% versus 17.0%).

Almost 1 in 3 full-time employees belonged to a union, compared with about 1 in 4 part-time. Also, almost 1 in 3 permanent employees was a union member, compared with 1 in 4 non-permanent.

High unionization rates were found among employees aged 45 to 54 (39.0%); among those with a postsecondary certificate or diploma (33.3%) or a university degree (33.2%); in Quebec (36.4%) and Newfoundland and Labrador (35.6%); in educational services (68.2%), public administration (66.9%), and utilities (65.4%); and in health care occupations (61.4%).

Low unionization rates were recorded among 15 to 24 year-olds (13.4%); in Alberta (22.3%); in agriculture (4.0%) and professional, scientific and technical services (4.6%); and in management occupations (7.7%).

**Table 2 Union membership, 2006**

	Total employees	Union member	
		Total	Density
	'000	'000	%
<b>Both sexes</b>	13,986	4,108	29.4
Men	7,106	2,068	29.1
Women	6,881	2,040	29.7
<b>Sector<sup>1</sup></b>			
Public	3,198	2,271	71.0
Private	10,789	1,837	17.0
<b>Age</b>			
15 to 24	2,443	327	13.4
25 to 54	9,864	3,196	32.4
25 to 44	6,592	1,918	29.1
45 to 54	3,272	1,277	39.0
55 and over	1,679	586	34.9
<b>Education</b>			
Less than Grade 9	349	95	27.3
Some high school	1,519	319	21.0
High school graduation	2,906	767	26.4
Some postsecondary	1,192	258	21.7
Postsecondary certificate or diploma	4,861	1,620	33.3
University degree	3,159	1,048	33.2
<b>Province</b>			
Atlantic	948	270	28.5
Newfoundland and Labrador	188	67	35.6
Prince Edward Island	58	16	28.1
Nova Scotia	389	105	27.0
New Brunswick	313	82	26.2
Quebec	3,263	1,189	36.4
Ontario	5,558	1,460	26.3
Prairies	2,436	650	26.7
Manitoba	501	172	34.3
Saskatchewan	396	135	34.2
Alberta	1,540	344	22.3
British Columbia	1,782	538	30.2
<b>Work status</b>			
Full-time	11,527	3,541	30.7
Part-time	2,459	567	23.1
<b>Industry</b>			
Goods-producing	3,298	931	28.2
Agriculture	139	6	4.0
Natural resources	274	58	21.3
Utilities	122	80	65.4
Construction	737	217	29.5
Manufacturing	2,026	570	28.2
Service-producing	10,688	3,177	29.7
Trade	2,331	301	12.9
Transportation and warehousing	666	276	41.5
Finance, insurance, real estate and leasing	863	76	8.8
Professional, scientific and technical	721	33	4.6
Business, building and other support	538	69	12.8
Education	1,109	756	68.2
Health care and social assistance	1,570	841	53.6
Information, culture and recreation	638	158	24.8
Accommodation and food	925	59	6.3
Other	490	47	9.6
Public administration	837	560	66.9



### Differences between the sexes

For the third year in a row, the unionization rate for women in 2006 surpassed that of men (29.7% versus 29.1%).

Among men, part-time employees had a much lower rate than full-time (17.7% versus 30.4%). Among women, the gap was narrower (25.4% versus 31.1%).

The unionization rate of women in the public sector (72.7%) exceeded that of men (68.3%), reflecting women's presence in public administration, and in teaching and health positions. However, in the private sector, only 12.4% were unionized, compared with 20.9% of men. The lower rate among women reflected their predominance in sales and several service occupations.

A higher-than-average rate was recorded among men with a post-secondary certificate or diploma (33.5%). For women, the highest rate was among those with a university degree (38.9%), reflecting unionization in occupations such as health care and teaching.

Among those in permanent positions, the rate for men (29.9%) was almost identical to that for women (30.1%). Among those in non-permanent positions, women were more unionized than men (27.2% versus 23.1%).

**Table 2 Union membership, 2006 (concluded)**

	Total employees '000	Union member	
		Total '000	Density %
<b>Occupation</b>			
Management	1,006	78	7.7
Business, finance and administrative	2,730	648	23.7
Professional	371	56	15.0
Financial and administrative	707	154	21.8
Clerical	1,652	438	26.5
Natural and applied sciences	1,001	231	23.1
Health	860	528	61.4
Professional	101	35	34.9
Nursing	260	211	81.2
Technical	214	124	58.2
Support staff	285	157	55.1
Social and public service	1,122	678	60.4
Legal, social and religious workers	454	176	38.7
Teachers and professors	667	502	75.2
Secondary and elementary	449	391	87.0
Other	219	111	50.9
Culture and recreation	323	86	26.6
Sales and service	3,514	702	20.0
Wholesale	364	23	6.4
Retail	1,027	124	12.1
Food and beverage	521	49	9.4
Protective services	220	123	56.1
Child care and home support	156	74	47.4
Travel and accommodation	1,226	309	25.2
Trades, transport and equipment operators	2,032	728	35.8
Contractors and supervisors	116	35	29.7
Construction trades	270	98	36.3
Other trades	790	304	38.5
Transportation equipment operators	512	189	36.8
Helpers and labourers	344	103	29.9
Unique to primary industries	300	42	14.1
Unique to production	981	356	36.3
Machine operators and assemblers	778	285	36.6
Labourers	203	72	35.2
<b>Workplace size</b>			
Under 20 employees	4,586	603	13.2
20 to 99 employees	4,583	1,345	29.3
100 to 500 employees	2,959	1,216	41.1
Over 500 employees	1,858	944	50.8
<b>Job tenure</b>			
1 to 12 months	3,284	474	14.4
Over 1 year to 5 years	4,376	998	22.8
Over 5 years to 9 years	2,209	705	31.9
Over 9 years to 14 years	1,286	464	36.1
Over 14 years	2,832	1,467	51.8
<b>Job status</b>			
Permanent	12,163	3,648	30.0
Non-permanent	1,823	460	25.2

1 Public-sector employees are those working for government departments or agencies; Crown corporations; or publicly funded schools, hospitals or other institutions. Private-sector employees are all other wage and salary earners.

Source: Statistics Canada, Labour Force Survey

## Average earnings and usual hours

Unionized jobs generally provide higher earnings than non-unionized ones (Table 3). However, factors other than collective bargaining provisions play a role as well. These include varying distributions of unionized employees by age, sex, job tenure, industry, occupation, firm size, and geographical location.

Although these factors have not been examined, it is clear that unionized workers and jobs tend to have certain characteristics that are associated with higher earnings. For example, union density is higher among older workers, those with higher education, those with long tenure, and those in larger workplaces. Although differences in earnings and non-wage benefits cannot be attributed solely to union status (Akyeampong 2002), the union wage premium (after adjusting for employee and workplace characteristics) has been estimated at 7.7% (Fang and Verma 2002).

In 2006, the average hourly earnings of unionized workers were higher than those of non-unionized workers. This held true for both full-time (\$23.34 versus \$19.84) and part-time (\$19.36 versus \$12.00) employees.

In addition to having higher hourly earnings, unionized part-time employees generally worked more hours per

**Table 3 Average earnings and usual hours by union and job status, 2006**

	Hourly earnings			Usual weekly hours, main job		
	All employees	Full-time	Part-time	All employees	Full-time	Part-time
		\$				
<b>Both sexes</b>	<b>19.72</b>	<b>20.99</b>	<b>13.80</b>	<b>35.7</b>	<b>39.6</b>	<b>17.5</b>
Union member	22.79	23.34	19.36	36.0	38.7	19.3
Union coverage <sup>1</sup>	22.73	23.30	19.20	36.0	38.7	19.2
Not a union member <sup>2</sup>	18.33	19.84	12.00	35.5	40.0	16.9
<b>Men</b>	<b>21.43</b>	<b>22.44</b>	<b>12.78</b>	<b>38.3</b>	<b>40.8</b>	<b>16.6</b>
Union member	23.60	24.00	17.71	38.4	39.8	18.0
Union coverage <sup>1</sup>	23.58	24.00	17.57	38.4	39.9	17.8
Not a union member <sup>2</sup>	20.43	21.67	11.60	38.2	41.3	16.3
<b>Women</b>	<b>17.96</b>	<b>19.20</b>	<b>14.24</b>	<b>33.0</b>	<b>38.0</b>	<b>17.9</b>
Union member	21.96	22.54	19.85	33.5	37.3	19.7
Union coverage <sup>1</sup>	21.86	22.45	19.71	33.5	37.3	19.6
Not a union member <sup>2</sup>	16.15	17.58	12.20	32.7	38.4	17.3
<b>Atlantic</b>	<b>16.42</b>	<b>17.34</b>	<b>11.80</b>	<b>36.6</b>	<b>40.4</b>	<b>17.6</b>
Union member	21.25	21.46	19.39	37.6	39.5	20.4
Union coverage <sup>1</sup>	21.18	21.41	19.19	37.6	39.6	20.2
Not a union member <sup>2</sup>	14.38	15.40	10.09	36.2	40.8	17.0
<b>Quebec</b>	<b>18.87</b>	<b>19.94</b>	<b>14.01</b>	<b>34.7</b>	<b>38.3</b>	<b>18.3</b>
Union member	21.46	21.85	19.09	35.2	37.7	20.3
Union coverage <sup>1</sup>	21.33	21.75	18.75	35.3	37.8	20.2
Not a union member <sup>2</sup>	17.21	18.61	11.85	34.3	38.7	17.4
<b>Ontario</b>	<b>20.65</b>	<b>22.15</b>	<b>13.49</b>	<b>35.8</b>	<b>39.7</b>	<b>17.2</b>
Union member	24.07	24.81	19.11	36.3	38.9	18.6
Union coverage <sup>1</sup>	24.05	24.81	18.99	36.2	38.9	18.5
Not a union member <sup>2</sup>	19.32	21.04	12.00	35.6	40.0	16.8
<b>Prairies</b>	<b>19.90</b>	<b>21.13</b>	<b>13.82</b>	<b>36.7</b>	<b>40.6</b>	<b>17.3</b>
Union member	22.49	23.06	19.12	36.4	39.3	19.0
Union coverage <sup>1</sup>	22.54	23.11	19.21	36.4	39.4	18.9
Not a union member <sup>2</sup>	18.82	20.29	12.02	36.8	41.1	16.7
<b>British Columbia</b>	<b>19.91</b>	<b>21.03</b>	<b>15.21</b>	<b>35.3</b>	<b>39.6</b>	<b>17.4</b>
Union member	23.39	23.94	20.62	35.6	39.0	18.9
Union coverage <sup>1</sup>	23.40	23.96	20.55	35.7	39.0	18.8
Not a union member <sup>2</sup>	18.28	19.58	13.22	35.1	39.8	16.8

1 Union members and persons who are not union members but covered by collective agreements (for example, some religious group members).

2 Workers who are neither union members nor covered by collective agreements.

Source: Statistics Canada, Labour Force Survey

week than their non-unionized counterparts (19.3 hours versus 16.9). As a result, their average weekly earnings were nearly double (\$378.88 versus \$208.22).

On average, unionized women working full time received 94% as much in hourly earnings as their male counterparts. In contrast, women working part time earned 12% more.



## Wage settlements, inflation and labour disputes

Wage gains of 2.5% in 2006 matched the rate of inflation (Table 4). During the first four months of 2007, wage gains averaged 3.0%, over one percentage point higher than the rate of inflation (1.9%).

Wage gains in the private sector in 2006 (2.1%) fell short of those in the public sector (2.6%). The gap widened in the first four months of 2007. The corresponding figures were 2.5% and 3.6%.

Annual statistics on strikes, lockouts and person-days lost are affected by several factors, including collective

bargaining timetables, size of the unions involved, strike or lockout duration, and state of the economy. The number of collective agreements up for renewal in a year determines the potential for industrial disputes. Union size and strike or lockout duration determine the number of person-days lost. The state of the economy influences the likelihood of an industrial dispute, given that one is legally possible.

The estimated number of person-days lost through strikes and lockouts more than doubled from 1.7 million in 2003 to 4.1 million in 2005. In 2006, however, the number dropped sharply to 813,000.

**Table 4 Major wage settlements, inflation and labour disputes**

Year	Average annual increase in base wage rates <sup>1</sup>			Annual change in consumer price index <sup>1</sup>	Labour disputes and time lost <sup>3</sup>			
	Public sector employees <sup>2</sup>	Private sector employees <sup>2</sup>	Total employees		Strikes and lockouts <sup>4</sup>	Workers involved	Person-days not worked	Proportion of estimated working time
			%			'000	'000	%
1980	10.9	11.7	11.1	10.1	1,028	452	9,130	0.37
1981	13.1	12.6	13.0	12.4	1,049	342	8,850	0.35
1982	10.4	9.5	10.2	10.9	679	464	5,702	0.23
1983	4.6	5.5	4.8	5.8	645	330	4,441	0.18
1984	3.9	3.2	3.6	4.3	716	187	3,883	0.15
1985	3.8	3.3	3.7	4.0	829	164	3,126	0.12
1986	3.6	3.0	3.4	4.1	748	486	7,151	0.27
1987	4.1	3.8	4.0	4.4	668	582	3,810	0.14
1988	4.0	5.0	4.4	4.0	548	207	4,901	0.17
1989	5.2	5.2	5.2	5.0	627	445	3,701	0.13
1990	5.6	5.7	5.6	4.8	579	271	5,079	0.17
1991	3.4	4.4	3.6	5.6	463	254	2,516	0.09
1992	2.0	2.6	2.1	1.5	404	152	2,110	0.07
1993	0.6	0.8	0.7	1.8	381	102	1,517	0.05
1994	0.0	1.2	0.3	0.2	374	81	1,607	0.06
1995	0.6	1.4	0.9	2.2	328	149	1,583	0.05
1996	0.5	1.7	0.9	1.6	330	276	3,269	0.11
1997	1.1	1.8	1.5	1.6	284	258	3,608	0.12
1998	1.6	1.8	1.7	0.9	381	244	2,444	0.08
1999	2.0	2.7	2.2	1.7	413	160	2,443	0.08
2000	2.5	2.4	2.5	2.7	379	144	1,657	0.05
2001	3.4	3.0	3.3	2.6	381	221	2,199	0.07
2002	2.9	2.6	2.8	2.2	294	168	3,033	0.09
2003	2.9	1.2	2.5	2.8	266	81	1,736	0.05
2004	1.4	2.2	1.8	1.9	298	260	3,225	0.09
2005	2.2	2.4	2.3	2.2	260	199	4,149	0.12
2006	2.6	2.1	2.5	2.5	150	43	813	0.02
2007 <sup>5</sup>	3.6	2.5	3.0	1.9				

1 Involving 500 or more employees.

2 Public-sector employees are those working for government departments or agencies; Crown corporations; or publicly funded schools, hospitals or other institutions. Private-sector employees are all other wage and salary earners.

3 Involving 1 or more workers.

4 Ten person-days not worked.

5 2007 data refer to January to April only.

Sources: Statistics Canada, Prices Division; Human Resources and Skills Development Canada, Workplace Information Directorate

YOUR INDESPENSIBLE  
TOOL FOR DOING BUSINESS

# Market Research Handbook 2005

Whether you regularly make major business decisions or want merely to hone your business savvy from time to time, *Market Research Handbook (MRH) 2005* contains the market information you need.

## ***RELY ON MARKET RESEARCH HANDBOOK 2005 TO PROVIDE THE ESSENTIAL INDICATORS.***

- ☒ Key demographic variables  
Population, age, household spending,  
education, sex and more
- ☒ Vital economic indicators  
Labour force, consumer and industrial  
price indexes, international trade,  
gross domestic product and more
- ☒ Business demographics  
Industry sectors, business types  
and sizes, urban areas and more

## ***WITH OUR NEW 2005 EDITION, FINDING EXACTLY WHAT YOU ARE LOOKING FOR IS SIMPLE.***

- ☒ Over 300 easy-to-read pages
- ☒ More than 150 tables, 25 charts and graphs
- ☒ Data from local, regional and national  
perspectives, plus population estimates  
for 45 urban centres across Canada
- ☒ Choose print or PDF format

## ***WHY WAIT TO ORDER?***

Order your copy today for only \$134 plus taxes and gain access to the wealth of information contained in Market Research Handbook.

CALL: Toll-free 1 800 267-6677

FAX: Toll-free 1 877 287-4369

E-MAIL: [infostats@statcan.ca](mailto:infostats@statcan.ca)

MAIL: Statistics Canada, Finance,  
6-H, R.H. Coats Building,  
Tunney's Pasture,  
Ottawa, Ontario K1A 0T6

Print format: In Canada, please add either GST and applicable PST or HST. No shipping charges for delivery in Canada. For shipments to the United States, please add \$6 per issue. For shipments to other countries, please add \$10 per issue. Federal government clients must indicate their IS Organization Code and IS Reference Code on all orders.

**MRH is also available  
in PDF format for  
FREE!**

Get MRH online right now. Enjoy the  
complete print edition in PDF format. Visit  
[www.statcan.ca/english/ads/63-224-XPB/index.htm](http://www.statcan.ca/english/ads/63-224-XPB/index.htm)



# INFORMATION

## IS YOUR PASSPORT TO SUCCESS

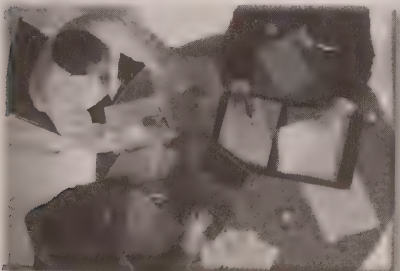


- ▶ IT GIVES YOUR BUSINESS THE COMPETITIVE EDGE.
- ▶ IT MAKES YOUR SOCIAL PROGRAMS RELEVANT AND BENEFICIAL.
- ▶ IT KEEPS YOU ON TOP OF CURRENT ISSUES AND CONCERNS.



### DEPEND ON THE MOST RELIABLE SOURCE

For developing business plans and market strategies, keeping abreast of social and economic trends or establishing an excellent information resource from which to draw, we've got your answer!



### ADVISORY SERVICES

Our expert consultants are available to help you make the most of your Statistics Canada experience. We will:

- ✓ work with you to define your needs.
- ✓ sift through our vast resources and put together an information package designed to meet those needs.
- ✓ analyze and interpret your customized data packages.
- ✓ even conduct surveys tailored to your specialized requirements.



### DRAW ON OUR EXPERTISE

Contact us to find out how to get prepared for your journey into the future!



National toll-free enquiries line:  
1 800 263-1136

National TTY line: 1 800 363-7629

E-Mail: [infostats@statcan.ca](mailto:infostats@statcan.ca)

# PERSPECTIVES

ON LABOUR AND INCOME

## To keep up with ...

- the distribution of income and trends in wages in the country
- the education levels and the training of the labour force in Canada
- updates on research under way in the labour and income field
- the availability of new income and labour market data

## ... you need

**PERSPECTIVES ON LABOUR AND INCOME** (Catalogue no. 75-001-XPE) from Statistics Canada.

A yearly subscription to **Perspectives on Labour and Income** (four issues) costs just \$63.

Mail your order to Statistics Canada, Finance Division, R.H. Coats Bldg., 6th floor, 100 Tunney's Pasture Driveway, Ottawa, Ontario K1A 0T6. Or fax 1 877 287-4369 (Canada and United States) or call 1 800 267-6677 (Canada and United States) and use your VISA or MasterCard, or e-mail [infostats@statcan.ca](mailto:infostats@statcan.ca)



75-001

Catalogue no. 75-001-XPE

# PERSPECTIVES

ON LABOUR AND INCOME

**WINTER 2007**

Vol. 19, No. 4

- HIGH-INCOME  
CANADIANS
- SPENDING PATTERNS  
IN CANADA AND  
THE U.S.
- ECONOMIC  
INTEGRATION  
OF IMMIGRANTS'  
CHILDREN
- PENSIONS AND  
RETIREMENT SAVINGS  
OF FAMILIES
- DEPRESSION  
AT WORK
- VARIA  
*International comparisons*
- CUMULATIVE INDEX  
1989 to 2007



Statistics  
Canada

Statistique  
Canada

Canada

## *At Your Service...*

### How to obtain more information

Specific inquiries about this product and related statistics or services should be directed to: *Perspectives on Labour and Income*, 9 A-6 Jean Talon, 170 Tunney's Pasture Driveway, Statistics Canada, Ottawa, Ontario, K1A 0T6 (telephone: (613) 951-4628; e-mail: [perspectives@statcan.ca](mailto:perspectives@statcan.ca)).

For information about this product or the wide range of services and data available from Statistics Canada, visit our website at [www.statcan.ca](http://www.statcan.ca) or contact us by e-mail at [infostats@statcan.ca](mailto:infostats@statcan.ca) or by phone from 8:30am to 4:30pm Monday to Friday at:

#### **Toll-free telephone** (Canada and the United States):

Inquiries line	1-800-263-1136
National telecommunications device for the hearing impaired	1-800-363-7629
Fax line	1-877-287-4369
Depository Services Program inquiries line	1-800-635-7943
Depository Services Program fax line	1-800-565-7757

<b>Statistics Canada national contact centre:</b>	1-613-951-8116
Fax line	1-613-951-0581

### Ordering/subscription information

This product can be ordered by

- telephone (Canada and United States) **1 800 267-6677**
- fax (Canada and United States) **1 877 287-4369**
- e-mail **[infostats@statcan.ca](mailto:infostats@statcan.ca)**
- mail Statistics Canada  
Finance Division  
R.H. Coats Bldg., 6th Floor  
100 Tunney's Pasture Driveway  
Ottawa, Ontario K1A 0T6
- In person from authorised agents and bookstores

When notifying us of a change in your address, please provide both old and new addresses.

### Standards of service to the public

Statistics Canada is committed to serving its clients in a prompt, reliable and courteous manner. To this end, the Agency has developed standards of service, which its employees observe in serving its clients. To obtain a copy of these standards, please contact Statistics Canada toll free at 1-800-263-1136. The standards are also published on [www.statcan.ca](http://www.statcan.ca) under About us > Providing services to Canadians.



# PERSPECTIVES

## ON LABOUR AND INCOME

### ■ Departments

- 3 Highlights
- 71 What's new?
- 73 Varia  
*International comparisons*
- 80 Cumulative index  
1989 to 2007

**Perspectives on Labour and Income**  
(Catalogue no. 75-001-XPE; aussi disponible en français: *L'emploi et le revenu en perspective*, n° 75-001-XPJ au catalogue) is published quarterly by authority of the Minister responsible for Statistics Canada.  
©Minister of Industry 2007. ISSN: 0840-8750.

PRICE: CAN \$20.00 per issue, CAN \$63.00 for a one-year subscription.

#### Shipping charges outside Canada:

	Single issue	Annual subscription
United States	CAN \$ 6.00	CAN \$24.00
Other countries	CAN \$10.00	CAN \$40.00

All prices exclude sales taxes.

All rights reserved. This product cannot be reproduced and/or transmitted to any person or organization outside of the licensee's organization.

Reasonable rights of use of the content of this product are granted solely for personal, corporate or public policy research, or for educational purposes. This permission includes the use of the content in analyses and the reporting of results and conclusions, including the citation of limited amounts of supporting data extracted from this product. These materials are solely for non-commercial purposes. In such cases, the source of the data must be acknowledged as follows: Source (or "Adapted from" if appropriate): Statistics Canada, year of publication, name of product, catalogue number, volume and issue numbers, reference period and page(s). Otherwise, users shall seek prior written permission of Licensing Services, Client Services Division, 100 Tunney's Pasture Driveway, Statistics Canada, Ottawa, Ontario, K1A 0T6.

Indexed in the *Canadian Index*, *Canadian Periodical Index*, *P.A.I.S. International*, *Sociological Abstracts*, *Econlit*, *Canadian Business and Current Affairs* and *Employee Benefits Infosource*. Also indexed in French in *L'Index de l'Actualité* and *Point de Repère*.

### ■ Articles

#### 7 High-income Canadians

*Brian Murphy, Paul Roberts and Michael Wolfson*

No agreed-upon definition exists of what constitutes high income, either in dollar cut-offs or as a percentage of the population. Researchers have used widely varying methods, producing widely varying outcomes. This paper presents various criteria for defining high income and looks at some of the characteristics and behaviours of high-income taxfilers under these definitions. Income taxes paid and effective tax rates are also examined.

#### 21 Spending patterns in Canada and the U.S.

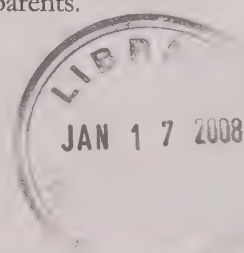
*Raj K. Chawla*

In addition to sharing a border, Canada and the United States share many demographic and economic characteristics. Both countries have aging populations and low unemployment rates. Consumer spending has also been similar, although differences exist in certain areas. A comparison of spending patterns in Canada and the U.S. between the early 1980s and 2003.

#### 31 Economic integration of immigrants' children

*Boris Palameta*

Challenges associated with the integration of immigrants often extend beyond the first generation. If children of immigrants experience similar impediments to social and economic assimilation as their parents did, then low socioeconomic status may be transmitted between generations. Such scenarios of second-class disadvantage may not apply to Canada. Even if immigrant earnings deficits relative to the native-born are increasing, it does not necessarily mean that children of immigrants will be worse off than the children of Canadian-born parents.



■ **Managing Editor**  
Henry Pold  
613-951-4608  
henry.pold@statcan.ca

■ **Editors**  
Sheila Kulka  
Nikki Burke

■ **Data Services**  
Joanne Bourdeau  
Laura Fraser

■ **Production and Composition**  
Ann Trépanier  
Annamma John

■ **Printing**  
Dissemination Division

■ **Cover Art**  
Ann Trépanier

## Symbols

The following standard symbols are used in Statistics Canada publications:

- . not available for any reference period
- .. not available for a specific reference period
- ... not applicable
- p preliminary
- r revised
- x confidential
- E use with caution
- F too unreliable to be published

The paper used in this publication meets the minimum requirements of American National Standard for Information Sciences – Permanence of Paper for Printed Library Materials, ANSI Z39.48 – 1984.

## 43 Pensions and retirement savings of families

*René Morissette and Yuri Ostrovsky*

Prime-aged couples experienced a moderate decline in RPP coverage over the last two decades, as the substantial growth in wives' labour market participation and the slight increase in their RPP coverage only partially offset a substantial decline in husbands' coverage. On average, retirement savings of families rose over the last two decades, but the distribution became more unequal. To a large extent, the uneven growth in retirement savings mirrors the sharp increase in family earnings inequality since the early 1980s.

## 57 Depression at work

*Heather Gilmour and Scott B. Patten*

Worldwide, depression is the leading cause of years lived with disability. It can affect many aspects of life, including work. In fact, the impact of depression on job performance has been estimated to be greater than that of chronic conditions. In 2002, almost 4% of employed Canadians aged 25 to 64 had had an episode of depression in the previous year. These workers had high odds of reducing work activity because of a long-term health condition, having at least one mental health disability day in the past two weeks, and being absent from work in the past week. In addition, depression was associated with reduced work activity and disability days two years later.

## Back Issues: Did you miss something?

*Don't worry!* Back issues of **Perspectives on Labour and Income** are available.

Feature articles in these issues include:

- |                    |  |
|--------------------|--|
| <b>Autumn 2007</b> | Labour inputs to non-profit organizations • Trends and seasonality in absenteeism • Working at home: An update • Life after high tech • Participation of older workers • Public pensions and work • Varia: <i>Unionization</i>                   |
| <b>Summer 2007</b> | The busy lives of teens • Payday loans • Fuelling the economy • GDP and employment growth • Literacy and employability • Varia: <i>Work absence rates, Gambling</i>  |
| <b>Spring 2007</b> | Revisiting wealth inequality • Work hours instability • Canada's unemployment mosaic, 2000 to 2006 • The aboriginal labour force in Western Canada • Young pensioners • Defining retirement • Varia: <i>Personal debt in Canada and the U.S.</i> |
| <b>Winter 2006</b> | The core-age labour force • Earnings instability • Training through the ages • Balancing career and care • Measuring housing affordability • Varia: <i>Minimum wage</i> • Cumulative index 1989-2006   |

For more information, contact **Statistics Canada, Dissemination Division, Circulation Management, 100 Tunney's Pasture Driveway, Ottawa, Ontario K1A 0T6**. Or, call toll free **1 800 267-6677**.

## Perspectives on Labour and Income

*The quarterly for labour market and income information*



# Highlights

## *In this issue*

### ■ **High-income Canadians** ... p. 7

- In 2004, 5% of Canadian taxfilers had an income of \$89,000 or more; only 1% reached \$181,000 or more.
- In 2004, the top 5% of taxfilers received 25% of total income and paid 36% of income and payroll taxes.
- The prevalence of high income peaks in the 45-to-64 age group. In 2004, individuals of that age represented less than a third of all income recipients, but made up more than half of the top 5%.
- Calgary had the highest proportion of families with income over \$250,000 in 2004, but Toronto had by far the most families with such incomes, almost one-third of the national total.
- Of the 1.2 million taxfilers who made up the top 5% of income recipients in 2004, three-quarters were men, even though men accounted for less than half of all taxfilers. However, since 1982 there has been an 11% increase in the portion of women in the top 5% of tax filers.

### ■ **Spending patterns in Canada and the U.S.** ... p. 21

- In the last two decades, overall consumer spending patterns have not changed significantly in either Canada or the United States. These patterns were closer for core labour force age households than for retirees.
- Among older households, proportionately more live in owned houses and drove owned vehicles in the United States than in Canada

- Both Canadian and American households allocate one-third of their spending dollar to housing and one-fifth to transportation.
- Canadians spend more than Americans on public transportation; in both countries, those 75 and over generally spend the most.
- Between the early 1980s and 2003, household spending on health increased slightly more in Canada, but it still remained much lower than in the United States.

### ■ **Economic integration of immigrants' children** ... p. 31

- Compared with their third-generation and higher peers, young Canadians with two immigrant parents are more likely to be visible minorities, and live in large urban centres in Ontario and British Columbia. They also tend to have more years of schooling, and are less likely to have ever been married or had children by the end of the six-year period of study.
- Geographic clustering into relatively prosperous areas and a tendency to delay childbirth—and to a lesser extent, higher levels of education—contribute to a significant earnings advantage among young women with two immigrant parents, compared with their peers with two native-born parents.
- Second-generation young men show little evidence of an earnings advantage. In fact, everything else being equal, some visible minority men with two immigrant parents appear to have a significant earnings disadvantage compared with their peers with native-born parents.

## ■ Pensions and retirement savings of families ... p. 43

- A decline in the pension coverage of male employees between 1978 and 2005, combined with a slight decrease in men's labour force participation, led to a 10 percentage point decline in the proportion of men with an RPP over the last two decades. In contrast, the percentage of women with an RPP rose, thanks to a strong increase in their participation rate and a slight increase in RPP coverage among female employees.
- The increase in the proportion of women with an RPP almost fully offset the decline among men. As a result, the percentage of individuals with an RPP changed very little over the last two decades: from 24% in 1978 to 22% in 2005.
- The proportion of couples with at least one RPP fell moderately over the past 15 to 20 years, as the growth in the proportion of wives with an RPP helped mitigate a substantial decline in the proportion of husbands with an RPP.
- On average, retirement savings of Canadian families rose over the last two decades. However, the distribution of retirement savings became more unequal. While two-parent families in the top 20% of the earnings distribution increased the sum of their RPP and RRSP contributions since the mid-1980s, contributions of those in the bottom 20% stagnated. To a large extent, the uneven growth in retirement savings appears to be driven by the sharp increase in family earnings inequality.

## ■ Depression at work ... p. 57

- In 2002, nearly half a million employed Canadians aged 25 to 64, almost 4% of the workforce, reported a major depressive episode in the previous 12 months. An additional million workers had experienced depression during some other period.

- In 2002, the majority (71%) of 25- to 64-year-old Canadians who reported having experienced a major depressive episode in the previous 12 months were employed; however, symptoms associated with this condition may have hampered their ability to perform their jobs.
- Overall, workers with major depression had been totally unable to work or carry out normal activities for 32 days in the previous year.
- In Canada, the cost of productivity losses in the form of short-term disability days due to depression was estimated at \$2.6 billion in 1998.
- The occurrence of depression in the workforce was twice as prevalent among women as men (5.1% vs. 2.6%) and was much more common among persons who were divorced, separated or widowed (7.5%)—as opposed to those married or in a common-law relationship (3.0%).

## ■ What's new? ... p. 71

### ■ From Statistics Canada

Registered retirement savings plans  
 Savers and investors  
 Delayed transitions of young adults  
 Women in the core public administration  
 Investment and long-term growth in labour productivity  
 Trade and industrial specialization

### ■ From other organizations

Productivity in the past decade  
 Trend labour supply in Canada

### Perspectives



# PERSPECTIVES

ON LABOUR AND INCOME

## THE COMPREHENSIVE JOURNAL

on labour and income  
from Statistics Canada

- ☐ Yes, I want PERSPECTIVES ON LABOUR AND INCOME  
(Catalogue no. 75-001-XPE).

Save  
by extending your  
subscription!

Save 20%  
by subscribing for 2 years!  
Only \$100.80 (plus taxes)

Save 30%  
by subscribing for 3 years!  
Only \$132.30  
(plus taxes)

Subscribe to *Perspectives on Labour and Income* today!



### MAIL

Statistics Canada  
Finance Division  
100 Tunney's Pasture  
Driveway, 6th floor  
Ottawa, Ontario  
Canada K1A 0T6



### PHONE

1 800 267-6677

Quote PF027090



### FAX

1 877 287-436  
613-951-0581



### E-MAIL

Infostats@statcan.ca

Name \_\_\_\_\_  
Company \_\_\_\_\_ Department \_\_\_\_\_  
Address \_\_\_\_\_ City \_\_\_\_\_ Province \_\_\_\_\_  
Postal Code \_\_\_\_\_ Phone \_\_\_\_\_ Fax \_\_\_\_\_  
E-Mail address \_\_\_\_\_

Catalogue No.	Title
75-001-XPE	Perspectives on Labour and Income

No shipping charges for delivery in Canada. Outside Canada, please add shipping charges as indicated. Canadian clients add either 6% GST and applicable PST or HST (GST Registration No. R121491807). Clients outside Canada pay in Canadian dollars drawn on a Canadian bank or pay in equivalent US dollars, converted at the prevailing daily exchange rate, drawn on a US bank. Federal government departments must include with all orders their IS Organization Code \_\_\_\_\_ and IS Reference Code \_\_\_\_\_

Your personal information is protected by the Privacy Act. Statistics Canada will use your information only to complete this sales transaction, deliver your product(s), announce product updates and administer your account. From time to time, we may also offer you other Statistics Canada products and services or ask you to participate in our market research.

If you do not wish to be contacted again for promotional purposes ☐ and/or market research ☐, check as appropriate.

### METHOD OF PAYMENT (Check only one)

Charge to my: ☐ MasterCard ☐ VISA ☐ American Express

Card Number \_\_\_\_\_ Expiry Date \_\_\_\_\_

Authorized Signature \_\_\_\_\_

Cardholder (Please print) \_\_\_\_\_

☐ Payment Enclosed \$ \_\_\_\_\_

Authorized Signature \_\_\_\_\_

Subscription	Price (CDN \$)	Quantity	Total CDN \$
1 year	63.00		
2 years	100.80		
3 years	132.30		


Subtotal	
Applicable GST (6%)	
Applicable PST	
Applicable HST (N.S., N.B., N.L.)	
Shipping charges U.S. CDN \$24, other countries CDN \$40	
Grand Total	

ORDER FORM



Statistics Canada  
Statistique Canada

Canada



# Need data? We've got it!

*Statistics Canada's CANSIM database makes the most current socio-economic information available to you.*

CANSIM is updated daily, so you know you're obtaining the freshest data for your information needs.

- Study economic activity
- Plan programs or services
- Profile demographics
- Analyze market potential
- Track trends

The applications are almost limitless!

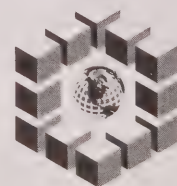
Locate what you want quickly and purchase what you need. You can browse by subject or by survey and download directly to your desktop.

***Fast, convenient, reliable—***

socio-economic data from a source you can trust!

To discover more about CANSIM, visit  
[www.statcan.ca](http://www.statcan.ca) today!

**CANSIM**





# High-income Canadians

*Brian Murphy, Paul Roberts and Michael Wolfson*

**M**edia interest in those with very high incomes seems never-ending. However, this interest goes beyond celebrity watching. Canada has a progressive system of taxes and transfers, which means that high-income recipients contribute a disproportionate portion of total taxes, which in turn help finance a range of government activities including transfer payments to those lower in the income distribution. The status of the high-income population is thus important to the financing of government activities. Changes to the income tax system may affect their behaviour. For example, increasing tax rates have been tied to issues such as the brain drain.

Considerable effort has been devoted over time and across countries to measure and characterize those with low incomes, but not those with high incomes. One reason is that only a few data sources (income tax data in particular) can support the study of this relatively small population. This study uses tax returns and survey data to explore trends in the number and characteristics of high-income Canadians, as well as their wealth and the effective income tax rates they face. It is intended to help inform current debate on topics such as tax fairness and income inequality.

There is no agreed-upon definition of high income, either in terms of absolute dollar thresholds or as a fixed percentage of the population. While defining poverty exhibits similar difficulties, numerous studies have discussed concepts such as 'deprivation' and 'strained circumstances,' providing some general support for selecting a threshold below which one is considered to be in low income. No corresponding literature exists for defining high income.

Survey data tend to have very small sample sizes at the upper tail of the income distribution, and also tend to suffer from a higher level of underreporting. The T1 Family File (T1FF) overcomes these problems. The

T1FF has had very good coverage, even of those with low or zero income, since the advent of refundable income tax credits—for children in 1978 and for everyone (the GST credit) in 1992. Additionally, the T1FF systematically links spouses and dependent children into families as appropriate (Patenaude and Clark 2000).<sup>1</sup>

## Where to draw the high-income line?

A number of thresholds have been used for defining high income. Just as with low income, these thresholds can be absolute dollar figures or expressed in terms of relative portions of the population. In each case, the aim is to describe the upper tail of an income distribution and separate those with high income from those without (Table 1).

### **Absolute nominal thresholds**

Thresholds defined in nominal dollar terms are the simplest. Absolute thresholds refer to a particular dollar amount—for example, \$100,000. Those with incomes higher than a given figure are considered to have high income. However, such thresholds suffer from changing monetary conditions, most particularly the effect of inflation. What might have seemed a sufficiently high threshold amount one or two decades ago may not be viewed the same way today, to the extent that some groups' income levels have risen or earnings have been eroded by inflation.

Examples of commonly applied absolute nominal thresholds include \$250,000, the highest income grouping used for many years by the Canada Revenue Agency (CRA);<sup>2</sup> \$150,000, used in Statistics Canada's census tables; \$100,000, used by the province of Ontario in their 'sunshine list' made available under the *Public Sector Salary Disclosure Act* (Campbell 1996); and the threshold at which the top federal tax rate begins—\$113,804 in 2004.<sup>3</sup>

*Brian Murphy is with the Income Statistics Division and can be reached at 613-951-3769 or [brian.murphy@statcan.ca](mailto:brian.murphy@statcan.ca). Paul Roberts is also with the Income Statistics Division and can be reached at 613-951-5811 or [paul.roberts@statcan.ca](mailto:paul.roberts@statcan.ca). Michael Wolfson is with the Analysis and Development Field and can be reached at 613-951-8216 or [michael.wolfson@statcan.ca](mailto:michael.wolfson@statcan.ca).*

### Relative thresholds

While absolute nominal thresholds are easy to understand, they suffer from changing 'real' values in the face of inflation. One alternative, as in the case of income tax bracket thresholds, is to index to the CPI so that their value is maintained. However, as with the longstanding discussion of relative versus absolute poverty or low-income lines, a parallel argument exists for defining high income in a relative manner. According to this argument, when the income of an average worker rises (because of real per capita economic growth, not just inflation), the threshold for high income ought to rise in the same proportion. A relative threshold divides an income distribution using a quantile cut-point to define those with higher incomes.<sup>4</sup>

Examples of relative threshold cut-offs include individuals or families at or above three times the median income (Murphy, Finnie and Wolfson 1994), the top third (Morissette and Ostrovsky 2005), the top fifth and top tenth (Morissette and Zhang 2006), the top 5% (Frenette, Green and Picot 2004; Atkinson 2003), and the top 1% (Rashid 1994). Each of these thresholds was used to divide the total 2004 income distribution for individuals and families into those with high incomes and those without.<sup>5</sup> These thresholds convey the wide variation in what may be considered high income. For individuals in 2004, it could be \$37,000 (top third of the income distribution) or \$250,000 (top 0.6%). In comparison, the top third of families had a high-income threshold of \$64,000, while an income of \$250,000 would categorize 1.5% of families as high-income.

**Table 1 Income thresholds for individuals and families**

	Individuals		Families	
	Cut-off	Above cut-off	Cut-off	Above cut-off
<b>Absolute threshold</b>	\$	%	\$	%
CRA	250,000	0.6	250,000	1.5
Census tables	150,000	1.4	150,000	5.4
Ontario 'sunshine list'	100,000	3.7	100,000	15.3
Top federal tax rate	113,804	2.4	113,804	11.3
<b>Relative threshold</b>				
Three times median	75,000	8.1	129,000	8.2
Top third	37,000	33.3	64,000	33.3
Top 20%	50,000	20.0	88,000	20.0
Top 10%	69,000	10.0	119,000	10.0
Top 5%	89,000	5.0	154,000	5.0
Top 1%	181,000	1.0	305,000	1.0

Source: Statistics Canada, T1 Family File, 2004

Not surprisingly, different thresholds produce varying pictures of the high-income category. Given the arbitrariness of any specific choice, the analysis uses a range of thresholds. However, the predominant focus is on relative thresholds, and generally those involving the top 10% of the population or less.

### The income parade

Jan Pen, a Dutch economist, uses the image of a parade of dwarfs (and a few giants) to illustrate the general shape of income distribution (Pen 1971, 48). Everyone in the country lines up in a parade in order of income. People with average income have the average height, and those with more or less than the average have their statures magically stretched or shrunk in proportion. The parade is timed to pass in front of a reviewing stand over a period of exactly one hour.

A Canadian with the average income in 2004 would not pass the reviewing stand until 40 minutes

into the one-hour parade. At about the 54-minute mark, individuals would be about twice the average height (in the 90<sup>th</sup> percentile). At 57 minutes, those passing by would be two and a half times the average (95<sup>th</sup> percentile), and only two and a half minutes later they would be 5 times the average (99<sup>th</sup> percentile). With less than 4 seconds remaining in the parade, the passers by (top 0.1%) would be about 19 times the average height. The last fraction of a second would be taken up by giants at over 165 times the average height (top 0.01%).

### Then and now

On the one hand, the cut points up to and including the 80<sup>th</sup> percentile for individuals, and up to the median for families have been generally stable for over two decades (Table 2). On the other hand, the top 1% and smaller groups experienced major increases, much more so from 1992 to 2004 than in the previous decade.



**Table 2 Income thresholds**

	Individuals			Families		
	1982	1992	2004	1982	1992	2004
	2004 \$ ('000)					
Bottom 1%	0	0	0	0	1	0
Bottom 5%	0	2	1	3	7	7
10%	2	5	5	9	11	11
20%	8	10	10	17	16	17
25%	11	12	12	21	20	21
40%	19	18	19	33	31	33
50%	25	23	25	42	39	43
60%	31	30	31	51	49	55
75%	44	42	44	69	69	77
80%	49	47	50	76	77	88
90%	64	63	69	99	102	119
Top 5%	80	78	89	123	128	154
Top 1%	142	139	181	210	220	305
Top 0.1%	383	402	648	546	597	1,045
Top 0.01%	1,360	1,319	2,833	1,781	1,949	4,301

Source: Statistics Canada, T1 Family File

For example, for individuals, the real-dollar median was essentially flat at \$25,000 in 1982 and in 2004, while for families, the 50% threshold fluctuated between \$39,000 and \$43,000. Some variation did occur in the lower-income quantile cut points, but it was relatively limited. The first decile for individuals, for example, increased in real dollars from approximately \$2,000 in 1982 to \$5,000 by 2004; the change for families was from \$9,000 to \$11,000.

By contrast, the cut points for the highest quantiles increased significantly—the top 5% of individuals from \$80,000 to \$89,000, and the top 0.01% from \$1,360,000 to \$2,833,000. Similar changes occurred for families. One way of illustrating the magnitude of these constant dollar changes is to relate them to the median (Table 3). The highest percentiles of income earners, whether individuals or families, experienced very high growth. In 1982, the top 5% of individual incomes were 322% of the corresponding median; by 2004 this had increased to 364%. A similar change was observed for families.

These changes were more dramatic for the very highest quantile thresholds. In 1982, the top 0.01% income threshold for individuals was 55 times larger than the median, and by 2004, it was over 115 times larger. For families, the pattern was the same—over 40 times the median in 1982 and 100 times by 2004.

**Table 3 Income cut-off as a proportion of median income**

	Individuals			Families		
	1982	1992	2004	1982	1992	2004
	%					
25%	44	51	48	50	50	49
50%	100	100	100	100	100	100
75%	177	180	181	163	174	180
90%	258	273	282	235	258	277
Top 5%	322	339	364	294	324	358
Top 1%	572	601	737	501	558	707
Top 0.1%	1,544	1,743	2,644	1,301	1,511	2,425
Top 0.01%	5,475	5,723	11,552	4,243	4,934	9,976

Source: Statistics Canada, T1 Family File

Threshold income values, in constant dollars or as a proportion of the median, can understate the magnitude of changes in the income distribution. For example, the constant dollar threshold for the top 5% of individual filers and top 5% of families increased by 11% and 25% respectively from 1982 to 2004. However, the average income of the top 5% of individuals increased 34% (from \$133,000 to \$178,000) while that of families jumped 50% (Table 4).

These increases, for the most part, were not paralleled in lower parts of the income spectrum. Individuals with incomes in the bottom four-fifths, for example,

**Table 4 Average income**

	Individuals			Families		
	1982	1992	2004	1982	1992	2004
	2004 \$ ('000)					
Bottom 5%	-90	0	0	-12	2	2
Bottom 10%	-5	2	2	-1	6	6
Bottom 20%	2	5	5	6	10	10
20% to 40%	14	14	14	25	23	25
40% to 60%	25	23	25	42	40	43
60% to 80%	40	37	40	63	62	70
Top 20%	79	77	93	120	124	158
Top 10%	102	100	128	153	160	215
Top 5%	133	130	178	197	206	296
Top 1%	269	268	429	380	404	684
Top 0.1%	852	822	1,641	1,143	1,196	2,493
Top 0.01%	2,903	2,547	5,920	3,658	3,490	8,443

Source: Statistics Canada, T1 Family File

experienced little or no real increase in mean income. Families in the first and fourth quintiles did experience some growth, but those in the second and third quintiles saw little or no change. Increases in average incomes were generally limited to the top quintile and were increasingly marked in the higher reaches of the upper tail.

### More people or higher incomes?

Yet another way to display these trends is by the shares accruing to each segment of the income spectrum (Table 5). Whether the bottom 90% or 95%, whether individuals or families, their shares of the income pie decreased, especially between 1992 and 2004. In contrast, the share of the top 5% increased by about one-quarter, the top 1% by about half, and the top 0.1% and 0.01% by nearly 100%. For example, the top 0.01% of individuals had less than 1% of all income in 1982 and in 1992, but by 2004 they had 1.7%.

**Table 5 Shares of income**

	Individuals			Families		
	1982	1992	2004	1982	1992	2004
	%					
Bottom 5%	-1.0	-0.1	0.0	-0.8	0.2	0.2
5% to 10%	0.1	0.6	0.4	0.6	0.9	0.7
10% to 15%	0.6	1.0	0.9	1.1	1.2	1.1
15% to 20%	1.1	1.4	1.2	1.5	1.5	1.3
20% to 25%	1.5	1.7	1.5	1.9	1.7	1.6
25% to 30%	1.9	2.0	1.8	2.3	2.1	1.9
30% to 35%	2.3	2.3	2.1	2.6	2.4	2.2
35% to 40%	2.8	2.7	2.5	3.0	2.8	2.6
40% to 45%	3.2	3.0	2.8	3.5	3.2	2.9
45% to 50%	3.7	3.5	3.2	3.9	3.6	3.3
50% to 55%	4.2	3.9	3.7	4.3	4.0	3.7
55% to 60%	4.7	4.5	4.2	4.8	4.5	4.2
60% to 65%	5.2	5.0	4.7	5.3	5.0	4.7
65% to 70%	5.9	5.6	5.3	5.8	5.6	5.3
70% to 75%	6.6	6.3	5.9	6.4	6.3	6.0
75% to 80%	7.3	7.1	6.7	7.1	7.0	6.7
80% to 85%	8.2	8.0	7.7	7.9	7.9	7.7
85% to 90%	9.4	9.3	9.0	9.0	9.1	8.9
90% to 95%	11.2	11.2	11.0	10.7	10.9	11.0
Top 5%	21.0	20.9	25.3	19.3	19.9	24.1
Top 1%	8.5	8.6	12.2	7.4	7.8	11.2
Top 0.1%	2.7	2.6	4.7	2.2	2.3	4.1
Top 0.01%	0.9	0.8	1.7	0.7	0.7	1.4

Note: Total income includes capital gains and RRSP withdrawals.  
Source: Statistics Canada, T1 Family File

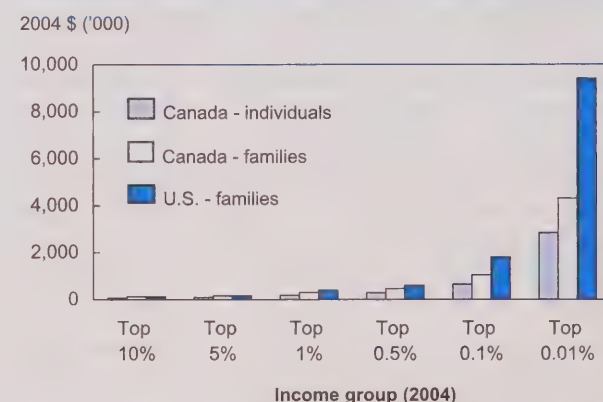
Shares of income as a relative indicator say little about the absolute numbers who have high income. In 1982, the proportion of individuals reporting \$100,000 or more stood at 2.6%. This fell to 2.3% in 1992 before climbing to 3.7% in 2004. By 2004, therefore, not only had the share of income accruing to the top 5% of individuals grown, so too had the number of high-income recipients.

The situation was similar for families, except that they saw a steady increase from 1982 to 2004. From 1982 to 1992, the proportion of families receiving \$100,000 or more increased from 9.7% to 10.6%. However, from 1992 to 2004, it increased by over 4.5 percentage points to 15%—from less than 1 in 10 families in 1982 to more than 1 in 7 by 2004. The proportions of families reporting at least \$500,000 more than doubled.

### Richer down south?

Comparisons between Canada and the U.S. are made constantly, for everything from the cost of gasoline and housing to the incomes of physicians and corporate executives. Many of these discussions touch on income. Up to some point in the first two-thirds of the income distribution, Canadian families equaled or even surpassed their American counterparts in the mid-1990s (Wolfson and Murphy 1998). But how do those with high incomes compare? The most striking

**Chart A Income threshold disparity most striking at the extreme high end**



Note: Purchasing power parity adjusted Canadian dollars.  
Sources: Statistics Canada, T1 Family File; U.S.: Piketty and Saez (2003), updated tables and figures



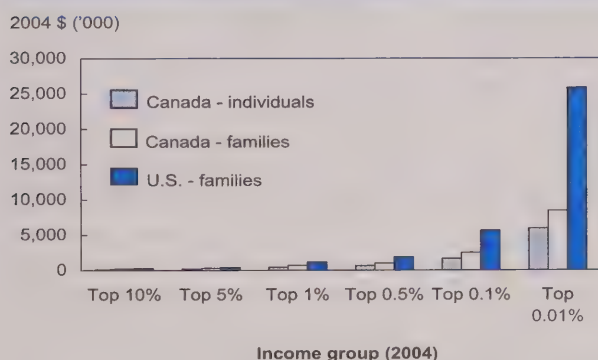
difference is the increasing divergence from the 90<sup>th</sup> percentile threshold to the top 0.01 percent cut-off (Chart A). In Canada, the top 5% of tax filing families in 2004 had an income of at least \$154,000. The 5% threshold for the U.S. was only slightly larger at \$165,000 (using purchasing power parity values). However, further up the income distribution, the U.S. and Canadian thresholds diverge considerably. The threshold for the top 0.01% in Canada is approximately \$4.3 million, compared with \$9.4 million in the U.S.<sup>6</sup>

However, these differences pale when comparing average income: \$296,000 for the top 5% of families in Canada in 2004, compared with \$416,000 for the U.S., or 40 percent more (Chart B). The differences grow even larger higher up the income distribution. For the top 0.01%, the U.S. average (\$25.8 million) was over 3 times the Canadian figure (\$8.4 million).<sup>7</sup>

### Where the money comes from

From 1946 to 2000, those with the highest incomes saw their main income sources change (Saez and Veall 2003). In the 1940s they relied on a combination of wages, capital (dividends, interest and capital gains) and entrepreneurial sources (self-employed professionals and sole proprietorship owners). For those with the very highest incomes (top 0.1% and 0.01%), however, wages were relatively less important. By the 1990s, wages and salaries had become increasingly more important for all high-income recipients, while capital and entrepreneurial sources had become less important.

**Chart B Average income disparity even more pronounced**



Note: Purchasing power parity adjusted Canadian dollars.  
Sources: Statistics Canada, T1 Family File; U.S.: Piketty and Saez (2003), updated tables and figures

This paper focuses on three main income sources: employment (wages and self-employment), investments (dividends and interest), and capital gains.<sup>8</sup> From 1982 to 2004, non-high-income (bottom 95%) individuals and families increased the proportion of income from employment from 90% to 95%. Investment income became less important, while capital gains remained unimportant.

Meanwhile, the highest-income individuals increased their proportion from employment at a considerably faster rate between 1982 and 2004—the top 1% from 59% to 74%, the top 0.01% from 36% to 62%. These two groups also saw an increase in capital gains income—the top 1% from 8% to 15%, the top 0.01% from 21% to 24%. Correspondingly, both groups experienced decreases in the proportion of investment income—the top 1% from 33% to only 10%, the top 0.01% from 43% to just 14%. Similar patterns occurred for families.

### Characteristics of high-income Canadians

The high-income group is quite different from the overall population in socio-demographic terms (Table 6). Of the 1.2 million Canadians who make up the top 5% of income recipients, three-quarters were men, even though men were a minority of individual income recipients in general (48%). This relationship becomes even more skewed the higher one proceeds up the income distribution. About one in nine individuals in the top 0.01% of income recipients were women in 2004. However, women have made substantial gains in their representation in the top 5% of taxfilers, gaining a further 10% share since 1982. These gains did not extend into the top 0.1%, where women's share was stable.

The prevalence of high income peaks in the pre-retirement years. In 2004, individuals aged 45 to 64 represented less than a third of all income recipients (33%), but were the majority in the top 5% (54%). In the top 0.01%, those aged 45 to 64 accounted for 3 in 5 high-income individuals. Individuals aged 25 to 44 years were the second largest group of high-income recipients in the top 5%, but seniors (23%) were second in the top 0.01%.

Almost half of the top 5% of individuals (46%) lived in Ontario, followed distantly by Quebec (18%), Alberta (15%) and British Columbia (13%). However, among the top 0.01% of individuals, Alberta was second at 23%, while Quebec was fourth at just 10%.

**Table 6 Individual taxfilers by income group**

	Total	Bottom 95%	Top			
			5%	1%	0.1%	0.01%
<b>Total</b>	<b>23,438</b>	<b>22,253</b>	<b>1,186</b>	<b>237</b>	<b>24</b>	<b>2</b>
			'000			
			%			
Men	48.3	46.8	75.7	78.8	84.3	88.7
Women	51.7	53.2	24.3	21.2	15.7	11.3
<b>Age</b>						
0 to 24	13.0	13.7	0.3	0.3	F	F
25 to 44	36.9	37.0	35.2	28.8	22.0	x
45 to 64	32.9	31.7	54.1	56.3	59.7	59.1
65 and over	17.3	17.6	10.4	14.6	18.1	22.6
Newfoundland and Labrador	1.7	1.7	0.8	0.7	F	F
Prince Edward Island	0.4	0.5	0.2	0.2	F	F
Nova Scotia	3.0	3.0	1.8	1.7	1.2	F
New Brunswick	2.4	2.5	1.2	1.0	F	F
Quebec	24.6	25.0	17.6	17.9	13.2	10.1
Ontario	37.9	37.5	46.2	47.1	50.4	51.1
Manitoba	3.6	3.7	2.3	2.1	1.7	F
Saskatchewan	3.0	3.1	2.0	1.8	1.2	F
Alberta	10.0	9.8	14.7	15.1	18.7	23.3
British Columbia	13.0	13.0	12.6	12.4	12.5	11.5
Single	43.4	44.5	21.8	19.4	17.1	17.3
Married	56.6	55.5	78.2	80.6	82.9	82.7

Source: Statistics Canada, T1 Family File, 2004

Over three-quarters (78%) of all high-income individuals were married, as were 83% of the top 0.01%.

Overall, from 1992 to 2004, each demographic group experienced real increases in income.<sup>9</sup> Some groups, such as individuals aged 45 to 64 and those living in Alberta, experienced much larger changes, with both seeing increases of approximately 60%. Overall, though, many groups experienced very little change—younger individuals (under 45), older individuals (65 and older), and those living in the smaller provinces.

Individual taxfilers, for the most part, saw little overall change from 1992 to 2004. Aggregate total income, for instance, increased by 10% for taxfilers aged 25 to 44.

However, the bottom 95% experienced no change whereas those in the top 5% saw an increase of approximately 30%. The increase was even greater in the top 0.01%, where income more than doubled.

Overall, individuals in the highest income ranges experienced the largest changes in aggregate total income from 1992 to 2004. High-income individuals in Alberta more than doubled their aggregate income ratio, while the province's top 0.01% more than quintupled theirs. Other groups in the top 0.01% that experienced large increases included men and women, individuals in Quebec and Ontario, middle-aged individuals (45 to 64), and both single and married persons. No group in the bottom 95% had a ratio larger than 1.6.

In 2004, 1.3% of families had incomes over \$250,000 (Chart C). Of 27 urban centres examined, fully 17 had at least 1.0% of families with such incomes, with Calgary (3.1%) and Toronto (2.5%) standing out. Almost one-third (30.6%) of all families with incomes over \$250,000 lived in Toronto, followed more distantly by Montréal (11.4%), Vancouver (8.2%), and Calgary (8.0%) (Chart D). This distribution and the province of these urban centres mirrored the provincial distribution of individuals.

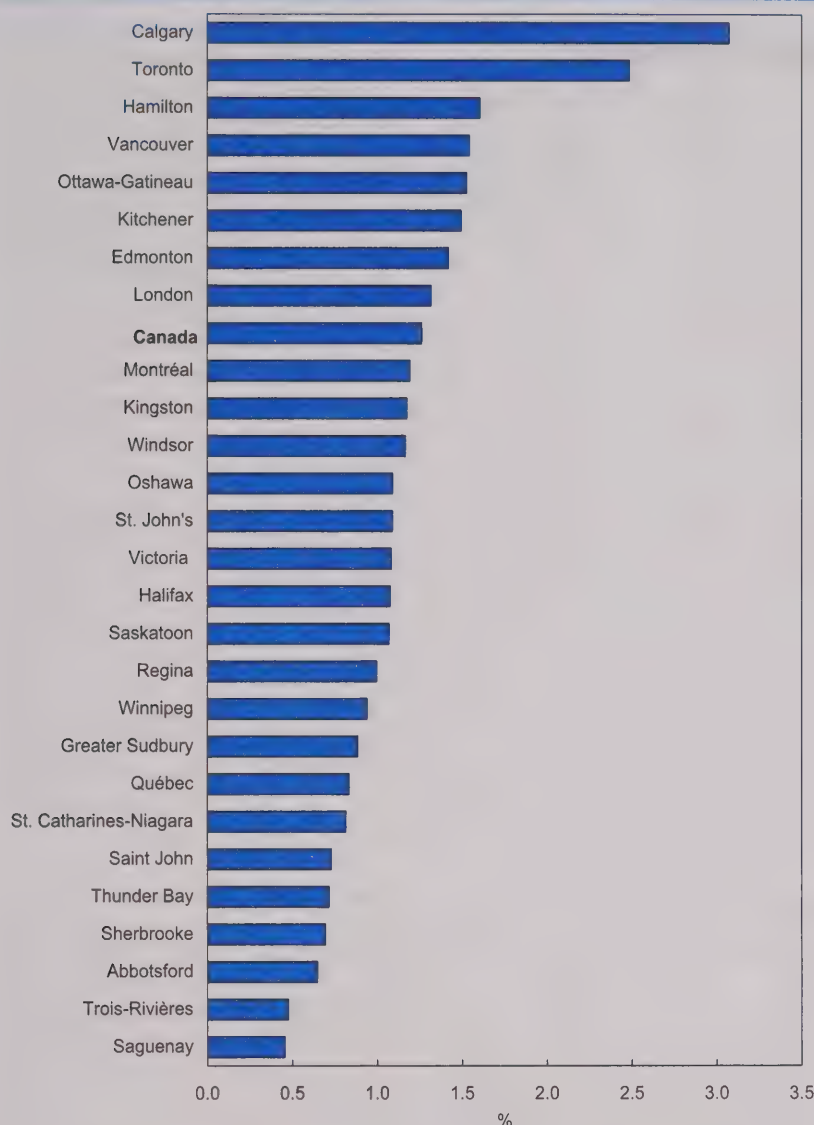
### Wealth of high-income Canadians

Economic well-being is not solely a function of income, but also of wealth. In fact, "consumption inequality is probably the better measure of inequality in well-being or economic resources" (Crossley and Pendakur 2006, 147). Given that both income and wealth are used to fund current consumption and together constitute economic well-being, to what degree are high-income Canadians also high-wealth Canadians?

The T1FF contains no information on assets or debts, only the taxfiler's annual income, deductions and tax credits. Statistics Canada's periodic Survey of Financial Security (SFS) measures income and net worth, and was most recently conducted in 2005 with a sample of 9,000 dwellings. The previous study was conducted for 1999 and had 23,000 dwellings. Given the sparseness of high-income families, the 1999 SFS was used to ensure adequate sample size. The sampling techniques used also help ensure a good response from high-income neighbourhoods.<sup>10</sup>



**Chart C Eight of 27 census metropolitan areas had a higher than average proportion of families with income over \$250,000**



Note: Excludes capital gains.

Source: Statistics Canada, T1 Family File, 2004

### Average income and net worth

In 1999, the average income for the bottom 80% of families was \$38,000 while their average net worth was about five times higher at \$192,000. The top 1% had aver-

age income of \$366,000 and average net worth of \$1.9 million, also roughly five times income. It follows that both the average income and average wealth of the top 1% are about 10 times that of the bot-

tom 80%. The implication is that some lower-income families have relatively high net worth (for example the elderly) while some high-income families have relatively low net worth (the young).

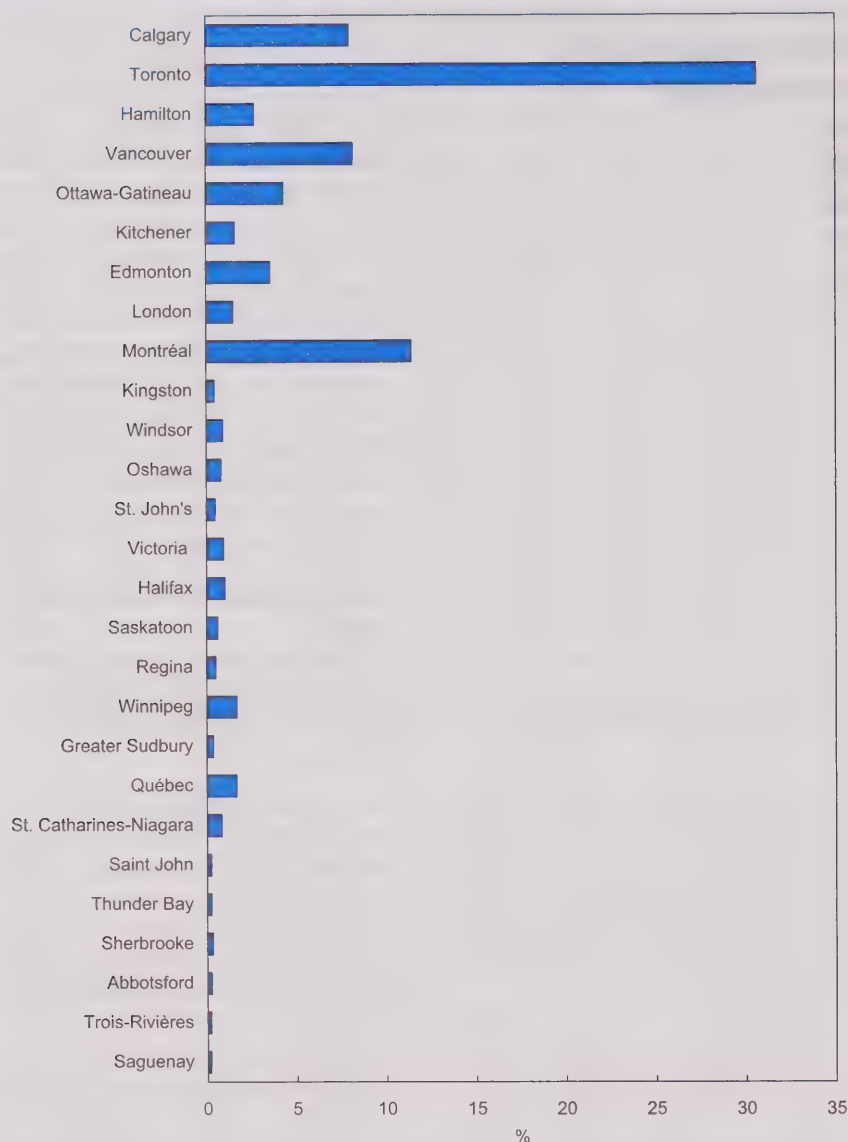
Not surprisingly, the importance of housing and vehicular assets declines as income increases. While houses and cars accounted for 31% of average net worth for the 80% of families with the lowest incomes, they accounted for only 16% for the top 1%. These top income families had 61% of their net worth in financial assets compared with 37% for the bottom 80%. Pension assets are far more evenly distributed—21% of net worth for the top 1% of families, 32% for the bottom 80%.

### Concentration of income and wealth

While the distribution of annual income is highly concentrated, wealth-holding is even more so (Davies 1991).

Concentration of income and wealth (more precisely, net worth) can be examined several ways. One is to look at either income or wealth on its own. Another is to look at the joint distribution. In 1999, the 5% of families with the highest net worth held 35% of all net worth but received only 12% of income. The 5% of families with the highest incomes received 18% of total income and held 19% of net worth. Therefore, the concentration of wealth in the top 20<sup>th</sup> of the wealth distribution was almost twice the concentration of income in the top 20<sup>th</sup> of the income distribution.

The top 1% of families show similar but somewhat more pronounced patterns, with a share of wealth 2.4 times that of income. In fact, some of the very highest

**Chart D Toronto is home for almost one-third of families with income over \$250,000**

Note: Census metropolitan areas ordered by incidence of high-income families; income excludes capital gains.

Source: Statistics Canada, T1 Family File, 2004

income families had lower net worth than many families further down in the income distribution. At first glance, it may seem odd that the share of wealth of high-

income families so closely follows their share of income. However, wealth accumulation takes time and as such, life-cycle effects and age must be taken into consideration.

Not surprisingly, the elderly had a higher median net worth at all levels of income. Their overall median was \$214,000, 2.5 times larger than the \$84,000 for the non-elderly. Even among lower-income elderly, median net worth was higher than for younger families, who had not had the time to accumulate assets. The gap decreases as the high income of younger families starts to provide wealth accumulation, narrowing the gap to about 2:1 in the top few vintiles. The elderly shares peak in the lower half of the distribution and then drop steadily through the upper half because incomes of the elderly decline as people retire from the labour market.

The very high-income elderly (top 1%) derive a smaller proportion of their net worth from principal residence and the actuarial value of pensions than do their younger counterparts. The very high-income elderly also have a significantly larger share of net worth in financial assets—68% compared with 35% for elderly families in the top 5% of income recipients.

### The question of taxes

The ratio of taxes to total income rises with income. In 2004, the bottom 95% of the taxfiler population received 75% of income and paid 64% of taxes, while the top 5% received 25% of income and paid 36% of taxes.<sup>11</sup>

Tax rates are an important indicator of the fairness of a tax system. The pattern of tax rates in relation to income is an indicator of vertical equity of the system, where a basic principle is taxation according to ability to pay. This is generally interpreted to mean that those with higher incomes should face higher rates. However, fairness also



means that people in similar circumstances should be taxed in a similar way (horizontal equity). The tax system is also asked to meet other, often competing goals, such as simplicity, efficiency, revenue generation, and the granting of various concessions and incentives referred to as tax expenditures. The political process determines the appropriate balance.

A number of different tax rates can be examined. Nominal (statutory) tax rates are provided in legislation and are higher for higher incomes. The marginal tax rate applies to the last dollar of income. These rates are sensitive to the kind of income and the unit of analysis—individual or family. The effective tax rate (ETR) is simply the ratio of taxes paid to total income.

The more common approach to calculating the ETR is to divide the taxes paid by all filers in a group by their corresponding income. This method shows that 20.2% of all income goes for taxes. The second method is to calculate each filer's ETR and then average these individual rates. This results in lower effective tax rates, 12.2% overall.<sup>12</sup> In the first case, the effective tax rate is weighted by income, giving more significance to the tax rates paid by high-income Canadians. In the second case, each individual's rate has the same importance. This can be seen by the convergence of the two rates as income increases and group size declines (Chart E). The latter method is used in the rest of this analysis. Either way, however, shows a generally progressive structure of effective tax rates in Canada. From 11.4%, the rate climbs to 27.1%, 30.5%, 32.3%, before dipping marginally to 31.7% for the highest income group.

The ETRs may still seem low, averaging well under 20% overall and about 28% for the top 5%, especially when compared with the top statutory tax rate of 46% in Ontario in 1995. It is important, however, to keep in mind the difference between average and statutory marginal tax rates. ETRs are always lower because the income in the denominator has been taxed at a mixture of statutory rates, including an initial bracket, determined largely by personal tax credits, where the rate is essentially zero.

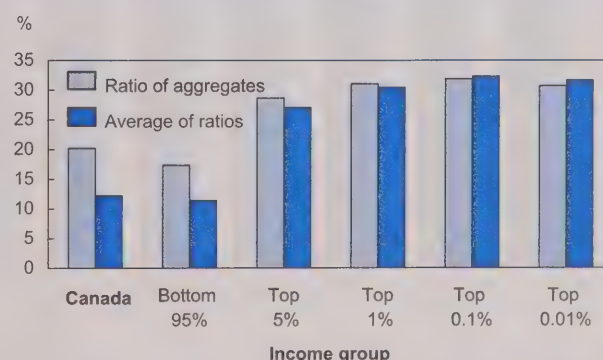
The distinction between marginal and average rates can be illustrated using the Social Policy Simulation Database and Model (Bordt et al. 1990). The tax and transfer system rules, rates and levels from each of the years 1984 to 2004 were applied to fixed populations of individual taxpayers and the results split into two income groups: the bottom 95% and the top 5%.<sup>13</sup>

For the bottom 95%, ETRs generally increased through the 1980s, remained roughly constant at just over 15% throughout the 1990s, and declined at the turn of the millennium, remaining steady through 2004. More fluctuation was evident in the high-income population because of high-income surtaxes and numerous changes to top federal tax brackets. They had a more pronounced rise in the mid-to-late 1980s, declining more sharply in 1988 with the introduction of tax reform, which reduced 10 brackets to 3 and converted many deductions to tax credits.

Marginal tax rates, in contrast, were estimated by simulating the incremental tax liability each individual would have incurred if their earnings had been increased by a small amount. The resulting marginal tax rates were then averaged across all filers within each income group. They are consistently at least 15 percentage points higher than the ETRs for the bottom 95%.<sup>14</sup> For high-income Canadians, the gap is naturally smaller at about 5% to 10%, as a greater proportion of income is subject to the top marginal rate. This gap has been shrinking as a result of the major tax reforms of 1998 and 2000/2001.

While the progressive structure of statutory income tax rates causes simulated marginal tax rates to rise with income, tax rates also vary significantly within a given income range. The group with the largest range is the top 0.01% where 90% of filers experience an ETR of between 9% and 46%. The filers in the 19<sup>th</sup> vingtile have the smallest spread, from 14% to 32%. This nar-

**Chart E Effective individual income tax rates vary by method of calculation**



Source: Statistics Canada, T1 Family File, 2004

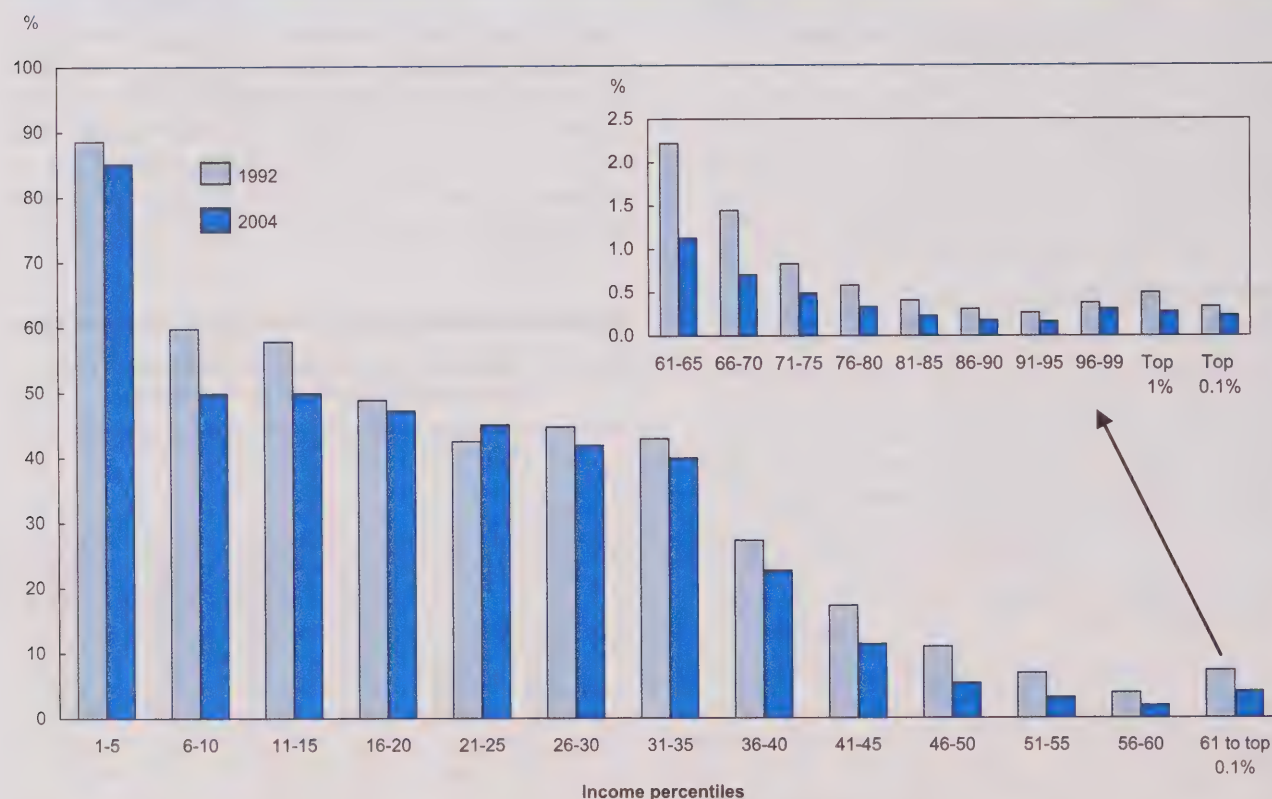
rower range of ETRs indicates a more homogeneous use of deductions and credits than any other income group among the top 60% of filers. Fully 5% of individuals with incomes in excess of \$3.5 million paid effective tax rates of less than 10% after deductions and credits.

Over 85% of the 5% of Canadians with the lowest incomes in 2004 paid no income or payroll taxes (Chart F). While some individuals may have no income taxes payable, Employment Insurance and Canada or Quebec Pension Plan contributions may still be payable. The proportion paying no taxes drops sharply after the first vingtile but remains over 40% until the 35<sup>th</sup> percentile. It then drops quickly to below 1% approximately two-thirds of the way up the income distribution.

In the upper tail of the income distribution, a small increase in the proportion of filers paying no tax can be seen beginning with the top 5%. The proportion of filers paying no tax remains below 0.5%, and in the very highest income group, about 100 filers paid no tax. Tax deductions such as business losses and gifts to the Crown are responsible for a number of these situations. The proportion of filers reporting zero taxes declined at almost all income levels between 1992 and 2004.

While a very few high-income Canadians reduce their taxes to zero, far more have relatively high ETRs (Chart G). In 2004, 3% of individual taxfilers experienced ETRs in excess of 30%. Only 1% of non-high-income filers had ETRs greater than 30%, compared with 37% of those with high income. For the higher-income groups, this proportion rises to between 58%

**Chart F The proportion of taxfilers paying zero taxes declined at almost all income levels**



Source: Statistics Canada, T1 Family File



and 65%. While the overall proportion of high-income Canadians (the top 5%) with ETRs over 40% is 3%, almost one-third of those in the top 0.01% have ETRs over 40%. These filers expose enough income to the top marginal rate to essentially bring their average rate close to the marginal rate.

ETRs are determined by the interplay of the distribution of income by source and the structure of the tax and transfer system. Both of these changed between 1992 and 2004. The income share of the top 5% increased from 20% to 24% while tax rates fell, especially with the reforms of 2000/2001.<sup>15</sup> The 2004 ETRs are slightly lower than 1992 for all the income groups shown. However, for the top 0.01% of individuals, the mean tax rate dropped by a quarter, from 42% to 31% (Chart H).

For the top 0.01%, the mean ETR in 2004 was 74% of the 1992 ETR. Overall, high-income Canadians increased their income share by 21% from 1992 to 2004. Meanwhile the tax rate dropped from 31% to 29% (a 6% reduction), while the share of total taxes paid by high-income Canadians went from 31% to 36% (an 18% increase). The differences were larger for the highest income group with a 26% drop in the tax rate and a 57% increase in the share of taxes paid.

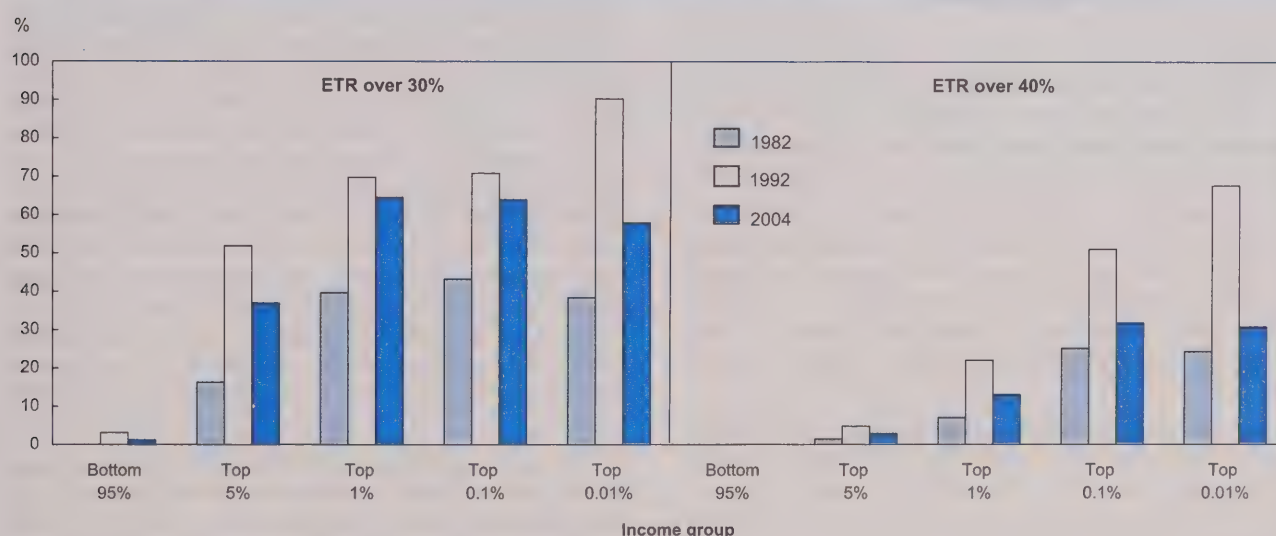
## Conclusion

Some 5% of individual taxfilers had incomes of \$89,000 or more in 2004. Regardless of the threshold used, incomes in the upper tail of the distribution as well as the share of total income increased substantially from 1992 to 2004. In contrast, individuals in the bottom 50% to 80% generally saw little improvement in constant dollar income.

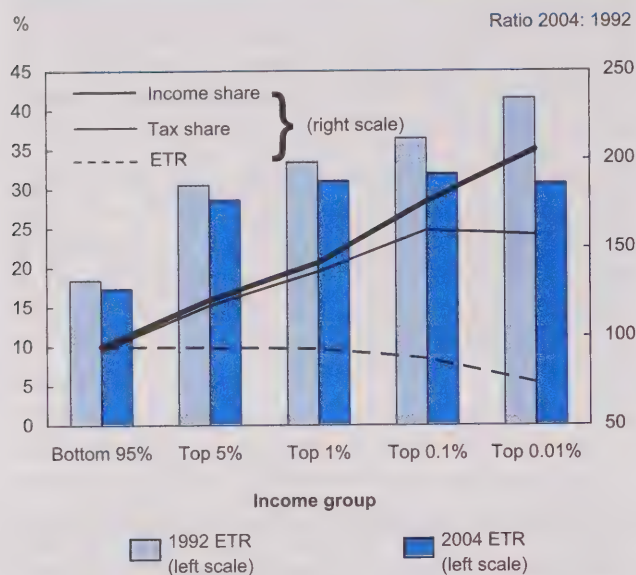
Compared with the U.S., Canada had significantly fewer high-income recipients in 2004, and their incomes were considerably less. High-income Canadians increasingly receive more of their income from employment than from other sources.<sup>16</sup> Investment income has been a decreasing proportion, even among those with the highest incomes.

In line with their increasing share of total income, high-income Canadians have been paying an increasing share of total personal income taxes. As well, effective income tax rates are clearly higher in the higher-income groups, reflecting the progressive nature of the income tax system. But there is considerable heterogeneity in effective tax rates at the individual level. Effective rates vary widely across the income distribution as well as among individuals within the highest income group. Many in the top 0.01% of the distribution face an

**Chart G High-income taxfilers more likely to face higher effective tax rates**



Source: Statistics Canada, T1 Family File

**Chart H For the top 0.01% of taxfilers, the mean ETR dropped by a quarter**

Source: Statistics Canada, T1 Family File

effective tax rate of over 45%, while some pay as little as 10%. Interestingly, the proportion of taxfilers who pay zero taxes decreased between 1992 and 2004.

### Perspectives

#### Notes

1 Whatever statistics for families are presented they include families of size one (usually referred to as unattached individuals or persons not in families). The incomes of families have not been adjusted with any equivalence scale.

2 Each year the CRA publishes tax statistics for taxfilers, including level of income, sources of income, and taxes paid. The \$250,000 income level is not selected to conform to any particular governmental policy or regulation, but rather is chosen simply to represent a convenient measure of the highest level of income while protecting the confidentiality of individuals.

3 In contrast to the other nominal thresholds, this one is currently indexed to the CPI and refers to taxable income. In this it is more akin to an absolute low-income threshold, since virtually no low-income cut points fail to adjust at least for inflation.

4 These cut points are typically expressed in terms of percentiles, deciles, quintiles, quartiles, etc. An alternative relative threshold would be a level expressed as a multiple of a quantile, such as 10 times the median for a high-income threshold, similar to the more common half median used as a cut point for demarcating low income.

5 The T1 Family File provides information on individual taxfilers and families. For this study, each of these two groups is ordered from lowest to highest total income, and then divided into 10,000 equally sized quantiles, with corresponding dollar income thresholds for each. The total income associated with the change from one quantile to the next provides the dollar figure used to determine the value of any particular threshold. Except where noted, T1FF income figures include total capital gains and RRSP withdrawals.

6 There is an important caveat to this analysis of taxes paid. An unknown number of high-income individuals and families receive business income through a corporation, and may hold investments in corporations, trusts, or charitable foundations. These are used in sophisticated tax planning and are not considered in this analysis because of data limitations.

7 The U.S. data come from Piketty and Saez (2003), updated tables and figures.

8 This analysis of income sources following Saez and Veall (2003, 37) does not include other sources such as alimony, taxable social security benefits, or taxable Employment Insurance benefits. These are less important for high-income individuals. The total income variable in this paper does include them.

9 The change in aggregate income is represented by the ratio of 2004 income to 1992 income.

10 The SFS main sample consisted of approximately 21,000 dwellings. This area sample was a stratified, multi-stage sample selected from the Labour Force Survey sampling frame. The second portion of the sample, approximately 2,000 households, was drawn from geographic areas in which a large proportion of households had what was defined as high income. This sample was included to improve the quality of the estimates of net worth, as higher-income families tend to hold a disproportionate share of net worth. For purposes of this sample, the income cut-off was total family income of at least \$200,000 or investment income of at least \$50,000. The latter was used to take into account families that may not have high income from employment but who do have substantial assets that generate investment income.

11 The shares are calculated as the ratio of total income or taxes for each income group to total income or taxes for all Canadians. Total tax, federal plus provincial, includes repayment of social benefits and payroll taxes. Total income is reported on tax forms using total capital gains and dividend income plus the Child Tax



Credit and Sales Tax Credit. The Canada Revenue Agency publishes information on taxable capital gains and taxable dividend income. These have been adjusted to represent total income from these sources—that is, dividends are divided by 5/4 and capital gains by 3/4.

12 Some taxfilers report a negative income and some report taxes that exceed income. To control for the impact of such outliers and to preserve sample, tax rates were bounded between 0% and 100%.

13 The methodology employed shows the impact on tax rates of the changes to the tax system independent of business cycles and demographic change. The simulated average effective tax rates were roughly the same as those calculated using the T1FF data.

14 They are slightly lower than maximum combined federal plus provincial statutory rates in the tax system because they have been averaged across filers with different levels of income and deductions.

15 The level at which the highest federal tax rate starts to be paid increased to \$100,000 from \$60,000, and the lowest rate dropped from 17% to 16%. Provincial governments moved to their own rate schedules.

16 This agrees with the findings of Saez and Veall (2003).

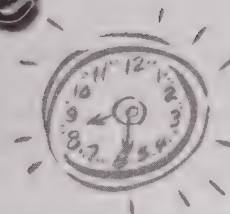
## ■ References

- Atkinson, A. B. 2003. *Top Incomes in the United Kingdom over the Twentieth Century*. Discussion paper. Updated from original University of Oxford Discussion Paper in Economic and Social History, no. 43, Jan. 2002. 55 p. <http://www.nuff.ox.ac.uk/users/atkinson/TopIncomes20033.pdf> (accessed August 3, 2007).
- Bordt, Michael, Grant J. Cameron, Stephen F. Gribble, Brian B. Murphy, Geoff T. Rowe and Michael C. Wolfson. 1990. "The social policy simulation database and model: An integrated tool for tax/transfer policy analysis." *Canadian Tax Journal*. Vol. 38, no. 1. Jan-Feb. p. 48–65.
- Campbell, Murray. 1996. "Incomes now public for many receiving \$100,000 in Ontario tax-funded bodies live up to new law." *The Globe and Mail*, March 30, 1996, p. A1.
- Crossley, Thomas F. and Krishna Pendakur. 2006. "Consumption inequality in Canada." In *Dimensions of Inequality in Canada*. David A. Green and Jonathan R. Kesselman (eds.). Vancouver. UBC Press. p. 127–153.
- Davies, James B. 1991. "The distributive effects of wealth taxes." *Canadian Public Policy*. Vol. 17, no. 3. September. p. 279–308.
- Frenette, Marc, David Green and Garnett Picot. 2004. *Rising Income Inequality in the 1990s: An Exploration of Three Data Sources*. Statistics Canada Catalogue no. 11F0019MIE no. 219. Ottawa. Analytical Studies Branch research paper series. 30 p. <http://www.statcan.ca/english/research/11F0019MIE/11F0019MIE2004219.pdf> (accessed August 3, 2007).
- Morissette, René and Yuri Ostrovsky. 2005. *The Instability of Family Earnings and Family Income in Canada, 1986 to 1991 and 1996 to 2001*. Statistics Canada Catalogue no. 11F0019MIE no. 265. Ottawa. Analytical Studies Branch research paper series. 49 p. <http://www.statcan.ca/english/research/11F0019MIE/11F0019MIE2005265.pdf> (accessed August 3, 2007).
- Morissette, René and Xuelin Zhang. 2007. "Revisiting wealth inequality." *Perspectives on Labour and Income*. Vol. 19, no 1. Spring. Statistics Canada Catalogue no. 75-001-XPE p. 6–17.
- Murphy, Brian, Ross Finnie and Michael Wolfson. 1994. "A profile of high-income Ontarians." In *Taxation and the Distribution of Income*. Research Studies of the Fair Tax Commission of Ontario series. Toronto. University of Toronto Press. p. 101–132.
- Patenaude, Jan and Colleen Clark. 2000. *LAD Families*. Statistics Canada Catalogue no. 13-F0034-XIE. Longitudinal Administrative Data. Statistics Canada Intranet access only. 7 p.
- Pen, Jan. 1971. "A parade of dwarfs (and a few giants)." In *Income Distribution: Facts, Theories, Policies*. Trevor S. Preston (transl.). New York. Praeger. p. 48–58.
- Piketty, Thomas and Emmanuel Saez. 2003. "Income inequality in the United States, 1913–2002." *Quarterly Journal of Economics*. Vol. 118, no. 1. p. 1–39. New tables and figures updated to 2005 (Excel format), March 2007. <http://elsa.berkeley.edu/~saez/SAEZ/TabFig2005prel.xls> (accessed August 21, 2007).
- Rashid, Abdul. 1994. "High income families." *Perspectives on Labour and Income*. Vol. 6, no. 4. Winter. Statistics Canada Catalogue no. 75-001-XPE. p. 46–57.
- Saez, Emmanuel and Michael R. Veall. 2003. *The Evolution of High Incomes in Canada, 1920–2000*. National Bureau of Economic Research Working Paper Series no. 9607. Cambridge, Mass. 95 p.
- Wolfson, Michael C. and Brian B. Murphy. 1998. *New Views on Inequality Trends in Canada and the United States*. Statistics Canada Catalogue no. 124 STC5231E. Ottawa. 31 p.

# The Daily Routine

**FREE**  
at  
[www.statcan.ca](http://www.statcan.ca)

Statistics Canada's  
official release bulletin,  
every working day  
at 8:30 a.m. (Eastern time)



## This morning, like every morning, you:

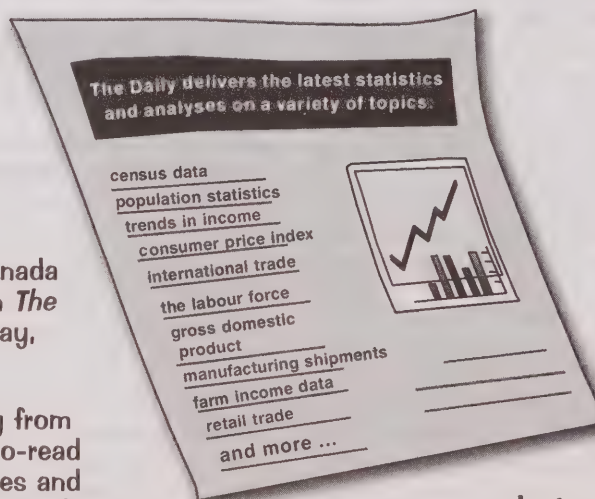


Is that right? You didn't read *The Daily*? Did you know that it's  
the best statistical information source in the country?

**E**ach working day, *The Daily* provides economic and social data that's available free of charge on our Web site. Journalists never miss it. Business leaders and policy makers use it to make sound decisions.

All new data from Statistics Canada must be officially announced in *The Daily*. So if you read it every day, you don't miss a thing!

*The Daily* delivers news directly from Statistics Canada—with easy-to-read news releases, informative tables and simple charts that clearly illustrate the news.



Subscribe to *The Daily*  
on the Internet.  
It's **FREE**.

Visit [www.statcan.ca](http://www.statcan.ca) to read  
*The Daily* when you need it.  
Or subscribe to the free online  
delivery service and receive  
*The Daily* automatically  
by e-mail.

Add it to your  
day-to-day activities...  
a good way to add  
substance to your *Daily* routine!



# Spending patterns in Canada and the U.S.

Raj K. Chawla

In addition to sharing a border, Canada and the United States share many demographic and economic characteristics. For instance, both have aging populations, the median age in 2005 reaching 38.0 in Canada and 35.9 in the U.S. In that year, two-thirds of each country's working-age population was in the labour force, and unemployment was low at 6.8% in Canada and 5.1% in the U.S. Persons 65 and over accounted for 13.1% of the population in Canada compared with 12.3% in the U.S. And in both countries, the majority lived in conventional two-spouse households.

While the business cycle and economic integration by way of NAFTA have varied to some degree in Canada and the U.S., both countries have moved from a high-interest environment in the early 1980s to a low-interest one in the 2000s. At the same time, consumer spending rose as a percentage of economic activity (from 52.8% to 58.9% in Canada and from 61.4% to 70.0% in the U.S.), causing the personal savings rate to fall.<sup>1</sup>

On average, income and spending change in predictable patterns as people age. Young people earn less and borrow to pay for houses and possessions. Through the middle years, work experience brings a rise in income, which along with increased family size spurs spending. Income tends to peak for workers in their 50s and spending declines as mortgages are paid off and the nest empties, leaving greater potential for savings. Retirement signals a reduction in income but also in spending as employment-related expenses disappear. While these general patterns hold in most advanced economies, they can vary from country to country and change over time. This article compares household spending in Canada and the U.S. between the early 1980s and 2003.<sup>2</sup>

---

*Raj K. Chawla is with the Labour and Household Surveys Analysis Division. He can be reached at 613-951-6901 or [raj.chawla@statcan.ca](mailto:raj.chawla@statcan.ca).*

Households are grouped by age of the reference person in order to compare spending in peak income years and after retirement. All money figures are in 2003 Canadian dollars (see *Data sources and definitions*). Seven categories of expenditure are used: food, housing, clothing, transportation, health, recreation, and 'other.' Since the means are based on two cross-sectional sources, an increase over time for a given component implies that households spent more in 2003 than their counterparts spent in the early 1980s.

## Little difference in the demographics of households in Canada and the U.S.

Between the early 1980s and 2003, Canadian households aged slightly more than their U.S. counterparts. In Canada, the median age of the reference person rose from 42.9 in 1982 to 47.9 in 2003, while in the U.S. it went from 43.5 to 46.9 between 1984 and 2003 (Table 1). In 2003, the proportions of households with a reference person 75 and over were fairly close—9.3% in Canada, 9.9% in the U.S. On the other hand, the proportion of young households (under 35) was higher in the U.S. by 4.3 percentage points.

The average Canadian household was a little larger than its American counterpart in the early 1980s, but by 2003 it was the same size—2.5 persons. In both countries, household size peaked in the 35-to-44 age group (3.2) and then dropped as the age of the reference person increased, reaching 1.5 for elderly households (75 and over).

The rate of homeownership was similar in both countries for households in the 15-to-54 age range, but the gap widened for older groups in favour of the U.S.—from 6 or 7 percentage points for those in the 55-to-64 group to 13 or 14 points for the 75-and-over group in 2003. The rate of homeownership has increased in both countries over the last 25 years, leaving the overall gap virtually unchanged. Nonetheless, downsizing with advancing age was evident in both countries as the rate of homeownership dipped after age 65.

**Table 1 Demographics of households**

	Households				Average household size				Own home			
	Canada		United States		Canada		United States		Canada		United States	
	1982	2003	1984	2003	1982	2003	1984	2003	1982	2003	1984	2003
	'000				Persons				%			
Total	8,410	12,033	90,223	115,356	2.8	2.5	2.6	2.5	60.7	65.8	62.0	67.0
					</							



**Table 2 Consumer expenditure of households**

	Total	Age of reference person						
		Under 25	25 to 34	35 to 44	45 to 54	55 to 64	65 to 74	75 and over
<b>Canada</b>								
<b>1982</b>	<b>37,700</b>	<b>32,200</b>	<b>39,600</b>	<b>47,100</b>	<b>46,600</b>	<b>34,200</b>	<b>23,000</b>	<b>16,700</b>
				CAN\$ 2003				
				%				
Housing	33.9	33.1	36.8	33.9	30.2	30.7	35.9	42.3
Transportation	16.2	17.6	15.3	15.1	17.2	18.7	16.6	11.7
Food	20.5	17.2	18.8	20.8	21.0	21.6	23.0	24.7
Clothing	8.2	8.5	7.8	8.8	9.1	7.7	6.6	6.1
Recreation	6.2	7.0	6.3	6.9	6.3	5.3	4.8	3.3
Health	2.6	2.0	2.3	2.5	2.8	3.0	2.8	3.1
Other <sup>1</sup>	12.5	14.4	12.7	12.0	13.4	13.0	10.4	8.8
<b>2003</b>	<b>42,700</b>	<b>32,200</b>	<b>42,600</b>	<b>49,300</b>	<b>51,600</b>	<b>43,300</b>	<b>30,200</b>	<b>21,700</b>
				CAN\$ 2003				
				%				
Housing	37.3	34.3	40.2	39.2	35.4	34.0	35.6	43.5
Transportation	19.0	17.8	18.4	18.0	19.7	21.6	19.4	13.6
Food	15.5	14.9	14.5	15.3	15.1	15.4	17.7	18.7
Clothing	5.6	6.0	5.6	5.7	6.0	5.6	4.9	3.8
Recreation	8.2	8.8	8.9	8.6	8.1	7.9	7.2	5.1
Health	3.6	2.3	2.6	3.0	3.5	4.3	5.5	6.8
Other <sup>1</sup>	10.9	16.0	9.8	10.2	12.2	11.1	9.7	8.5
<b>United States</b>								
<b>1984</b>	<b>41,500</b>	<b>26,900</b>	<b>42,700</b>	<b>52,800</b>	<b>53,000</b>	<b>43,000</b>	<b>31,000</b>	<b>21,600</b>
				CAN\$ 2003				
				%				
Housing	34.5	29.8	36.0	35.6	32.4	33.5	33.9	39.7
Transportation	22.2	26.4	23.0	20.8	24.0	22.4	20.7	14.0
Food	17.0	16.6	15.7	17.5	17.5	17.3	17.8	17.2
Clothing	6.8	7.5	6.9	7.7	6.6	6.7	6.1	4.3
Recreation	5.4	5.2	6.0	6.1	5.1	5.3	4.1	3.7
Health	5.4	3.0	3.7	4.0	5.0	6.2	10.3	14.9
Other <sup>1</sup>	8.7	11.6	8.6	8.5	9.4	8.7	7.0	6.3
<b>2003</b>	<b>43,900</b>	<b>25,600</b>	<b>44,200</b>	<b>50,500</b>	<b>52,600</b>	<b>46,900</b>	<b>37,200</b>	<b>27,600</b>
				CAN\$ 2003				
				%				
Housing	37.9	34.4	40.4	39.5	36.8	36.3	35.9	39.0
Transportation	22.0	22.6	22.7	21.8	23.0	23.0	20.1	16.3
Food	15.1	16.5	14.9	15.4	15.0	14.6	15.2	14.4
Clothing	4.6	5.4	5.2	5.1	4.6	4.1	4.0	2.7
Recreation	5.8	4.6	5.5	6.2	5.7	6.4	6.7	4.1
Health	6.8	2.6	4.1	5.2	5.8	8.1	12.1	17.3
Other <sup>1</sup>	7.7	13.9	7.1	6.7	9.0	7.5	6.1	6.1

1 Personal care, reading materials, education, tobacco products and alcoholic beverages, gifts and contributions, and miscellaneous.  
 Sources: Statistics Canada, Family Expenditure Survey and Survey of Household Spending; U.S. Bureau of Labor Statistics, Consumer Expenditure Survey

Households in both Canada and the U.S. spent much more on housing, transportation, health, and recreation in 2003 than in the early 1980s, and less on food and clothing (Chart A). (The relatively larger growth in expenditures on transportation and recreation in Canada was partly due to the addition in 2003 of sub-categories such as leasing and rental of vehicles under

transportation, and packaged tours under recreation.) In contrast, inter-country differences in the rates of decline in expenditures on food and clothing were quite small.

Mean consumer expenditure drops as households move from their peak income years (45 to 54) through their elder years (75 and older) (Chart B). In Canada,

## Data sources and definitions

Data for Canada were taken from the 1982 **Family Expenditure Survey** and the 2003 **Survey of Household Spending**. Even though many improvements in survey content, collection and processing have been introduced over the years, the core classification of total expenditure by components has remained unchanged. To reduce response burden, the 2003 survey included 425 questions compared with 625 in 1982. Both surveys used personal interviews. For more details, see Statistics Canada (1984, 2000, and 2005).

Data for the United States are from the 1984 and 2003 **Consumer Expenditure Survey** (CES), conducted by the U.S. Census Bureau for the Bureau of Labor Statistics. Data are collected in two parts: a diary, or recordkeeping survey completed by participating respondents over two consecutive weeks; and an interview survey, in which expenditures are obtained in five interviews conducted at three-month intervals (BLS, 2005, p.4). The diary captures expenses on small and frequently purchased items, whereas the interview survey collects details that consumers can reasonably recall for a period of three months or longer.

### Total expenditure

Despite differences in collection, the basic framework and broad components of total expenditure in the two countries are fairly comparable. In Canada, it represents the sum of current consumer expenditure, contributions for security, other cash gifts and contributions, and personal income tax. In the U.S., it is the sum of the first three components only. The exclusion of income tax in the U.S. is due to the relatively weaker and nationally non-representative data on pre-tax income and income tax collected by the CES. Given such data limitations, any link between households' incomes and expenditures could not be compared; the focus is strictly on consumer expenditure as used by CES in the U.S.

Expenditures are transaction costs for goods and services consumed during a given reference year, including customs and excise taxes; federal, state (provincial) and local sales taxes; and other duties. Expenditures are out-of-pocket expenses as well as those for which payments were still to be made (for example, items purchased on credit or buy-now-pay-later plans). All expenditures are net of trade-in amounts. Items purchased for business purposes were excluded.

**Current consumer expenditure** comprises expenditures for food, shelter, household operation, furnishings and equipment, clothing, transportation, health, personal care, recreation, reading and printed materials, education, tobacco products and alcoholic beverages, and miscellaneous. For details, see Statistics Canada (1984, 2005) and BLS (2005). For this article, these 13 broad components have been collapsed into 7: housing, transportation, food, clothing, recreation, health, and the rest, primarily because the first 6 account for around 90% of total consumer expenditure (also referred to as total consumer spending). Since expenditures on housing, transportation, and health have risen over time in both Canada and the U.S., changes in these components are further studied in terms of their sub-components.

**Housing** expenditures include mortgage payments on an owner-occupied home, property tax, rent, maintenance, repairs, insurance, other property-related expenses, utilities (fuel, water, and electricity), expenditures on a vacation home, hotel or motel accommodation, household operation, furnishings, and equipment. In the 1982 Family Expenditure Survey, mortgage interest was included under shelter costs, while the principal was included under net changes in assets and debts.

**Transportation** costs cover private and public transportation. The former includes net outlay for vehicle purchases, rental, leases, licences and other charges, operation of owned or leased vehicles, and vehicle insurance.

**Health** expenditure includes all out-of-pocket costs for medical supplies and services and drugs, and premiums for health insurance.

A **household** consists of a person living alone or a group of persons occupying one dwelling unit (also treated as a consumer unit). The number of households, therefore, equals the number of occupied dwellings.

Households are classified by **age of head/reference person** to highlight how spending patterns change with age. Despite some differences, head (the concept used in 1982 in Canada) and reference person are used here synonymously. The husband was treated as the head in families consisting of couples with or without children, as was the parent in lone-parent families, and normally the eldest in all other families. On the other hand, the reference person was chosen by the household member being interviewed as the person mainly responsible for the financial maintenance of the household.

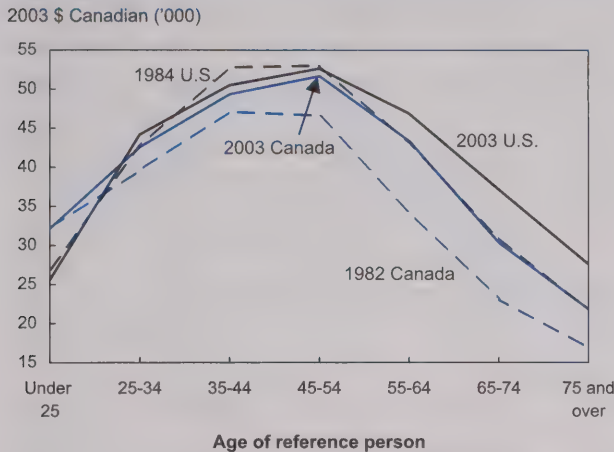
For both Canada and the U.S., data were first converted to 2003 dollars in their respective currencies. While the prices of all goods and services may not have risen at the same pace as the all-items CPI, the use of one conversion factor simplifies the analysis as it keeps the initial ranking of expenditure by components intact (Snider 2005). Then, to facilitate inter-country comparison of mean spending, all U.S. money data were converted into Canadian dollars using the GDP purchasing power parities (PPP) for 1984 and 2003 (see the OECD Web site at [www.oecd.org/std/ppp](http://www.oecd.org/std/ppp)). PPPs eliminate differences in price levels between countries.

A shift in consumer spending by component is quantified by an **index of differentiation**:  $(\sum |P_{c,i} - P_{u,i}|)/2$ , where  $P_{c,i}$  and  $P_{u,i}$  represent cents spent on component  $i$  in Canada and the U.S., and the summation is taken over all components of spending. This index shows the difference in two percentage distributions of spending, or put another way, the percentage points required to make the two distributions similar. This index can also be used to quantify a shift over time.

**Average expenditure by item** is obtained by dividing the aggregate amount for that item by total number of households rather than the number reporting that item. Per capita expenditure is the average expenditure divided by the average household size.



**Chart B Consumer expenditure peaks in middle age**



Sources: Statistics Canada, Family Expenditure Survey and Survey of Household Spending; U.S. Bureau of Labor Statistics, Consumer Expenditure Survey

it fell by 64% in 1982 and 58% in 2003. For households in the U.S., on the other hand, the corresponding drops were 59% in 1984 and 48% in 2003. While the inter-country gap in mean spending narrowed over time—more for households in their peak income years than for the elderly—the spending of elderly households increased more in the U.S. than in Canada.

In both the early 1980s and 2003, the elderly used about 40 cents of their spending dollar for housing. The rest was spent somewhat differently in the two countries—Canadians more on food and clothing, their U.S. counterparts more on transportation and health. Although spending on health increased among the elderly in both countries (from 3 to 7 cents in Canada and from 15 to 17 cents in the U.S.), those in Canada benefited from universal health care as well as provincially subsidized drug plans. Inter-country differences in elderly spending patterns remained almost unchanged—13.2 percentage points in 2003 compared with 14.5 points in the early 1980s, with differences largely attributable to U.S. spending on transportation, health, and food.

Like elderly households, those in their peak income years spent around one-third of every dollar on housing. The remainder was spent differently in the two

countries, but the differences narrowed over time (from an index of differentiation of 11.2 percentage points in the early 1980s to 7.2 points by 2003), largely because Canadian households increased their spending on housing, transportation, and health.

### Expenditure on housing

In 2003, 67% of American and 66% of Canadian households owned a home, with 30 to 43 cents of their spending dollar going toward shelter costs, household operation, and furnishings and equipment. Housing expenditures reached their peak in the 35-to-44 age group, whereas pre-tax income and overall consumer expenditure peaked in the 45-to-54 group. Between the early 1980s and 2003, mean spending on housing rose from \$12,800 to \$15,900 for Canadians and from \$14,300 to \$16,700 for Americans (Table 3).

In both countries, shelter alone accounted for 70% to 72% of total housing costs; the rest was attributed to household operation, furnishings and equipment. Regular mortgage payments were the major component for households in the 25-to-54 group. For elderly households, on the other hand, property taxes and maintenance and repairs accounted for most of the spending on owned quarters. The elderly, most of whom live in mortgage-free homes, spent about half the amount of those in their peak income years.

Households with a reference person under 25, who were mostly renters in both countries, spent the largest proportion on rent—45 cents of their housing dollar in 2003 in Canada and 51 cents in the U.S. Since homeownership rises with age until main income earners reach their mid-60s, rent expenditures fall in inverse proportion. The proportion spent on rent rises in later years as some of the elderly move to rental accommodation. This appears to be more prevalent in Canada, while more elderly Americans continue to live in owned homes.

### Canadians spend more on public transportation

Like housing, the rate of vehicle ownership was higher in the U.S. than in Canada—88% versus 78% in 2003. While the overall gap widened from the early 1980s, it narrowed for the elderly as their ownership rate rose more in Canada (Table 4). The rate varied by age, attaining its highest value for those in the 45-to-54 age group in the U.S. (92%), but for those in the 55-to-64 group in Canada (83%) in 2003. Irrespective of age,

**Table 3 Spending on housing**

		Age of reference person						
	Total	Under 25	25 to 34	35 to 44	45 to 54	55 to 64	65 to 74	75 and over
<b>Canada</b>								
<b>1982</b>	<b>12,800</b>	<b>10,700</b>	<b>14,600</b>	CAN\$ 2003				
				<b>15,900</b>	<b>14,100</b>	<b>10,500</b>	<b>8,300</b>	<b>7,100</b>
				%				
Shelter	68.6	67.5	68.2	68.6	67.6	68.2	71.1	74.6
Owned	32.3	9.8	32.4	39.6	34.7	30.1	26.6	20.7
Mortgage	15.9	6.0	21.3	22.9	14.3	6.9	2.6	0.7
Property tax	7.8	1.1	5.0	7.9	9.9	11.8	11.3	10.5
Maintenance	8.6	2.7	6.2	8.8	10.5	11.4	12.8	9.6
Rented	18.4	48.0	22.8	11.9	11.2	13.7	20.0	32.2
Other accommodation	3.9	2.1	2.6	3.8	5.9	5.7	4.3	2.9
Utilities	13.9	7.6	10.4	13.3	15.8	18.7	20.1	18.8
Household operation	17.1	15.8	17.4	17.5	16.6	17.4	16.7	16.1
Furnishings/equipment	14.3	16.6	14.4	13.9	15.8	14.4	12.3	9.3
<b>2003</b>		<b>15,900</b>	<b>11,000</b>	<b>17,100</b>	CAN\$ 2003			
				<b>19,300</b>	<b>18,300</b>	<b>14,700</b>	<b>10,800</b>	<b>9,400</b>
				%				
Shelter	71.4	70.3	71.2	71.4	71.6	70.4	71.2	74.4
Owned	39.7	15.1	37.9	44.5	43.4	39.0	33.0	25.7
Mortgage	22.0	9.4	25.5	28.5	24.8	16.6	7.1	2.6
Property tax	8.3	2.3	5.1	7.3	8.4	11.0	14.0	11.9
Maintenance	9.4	3.4	7.3	8.7	10.2	11.4	11.9	11.2
Rented	15.4	45.1	22.1	12.5	11.1	10.9	15.2	27.7
Other accommodation	4.1	2.0	2.5	3.5	5.0	5.9	5.3	3.4
Utilities	12.1	8.0	8.7	10.9	12.0	14.6	17.7	17.5
Household operation	17.5	17.9	16.9	18.1	17.0	17.7	18.1	17.7
Furnishings/equipment	11.1	11.8	11.9	10.5	11.5	11.9	10.8	8.0
<b>United States</b>								
<b>1984</b>	<b>14,300</b>	<b>8,000</b>	<b>15,400</b>	CAN\$ 2003				
				<b>18,800</b>	<b>17,200</b>	<b>14,400</b>	<b>10,500</b>	<b>8,600</b>
				%				
Shelter	70.3	72.1	71.5	71.1	68.6	67.6	70.3	72.1
Owned	30.9	12.3	31.4	36.2	33.6	30.4	25.7	23.4
Mortgage	18.7	9.6	24.2	26.6	20.3	11.4	5.0	2.8
Property tax	6.3	1.0	3.4	5.0	7.0	10.7	10.5	9.8
Maintenance	5.8	1.7	3.7	4.5	6.3	8.4	10.1	10.8
Rented	16.0	43.3	22.5	13.4	9.3	9.4	11.4	19.5
Other accommodation	5.3	5.1	3.2	5.3	6.6	6.6	7.8	3.6
Utilities	18.0	11.3	14.3	16.2	19.2	21.2	25.4	25.6
Household operation	15.8	14.6	16.0	14.7	15.6	15.7	18.1	19.3
Furnishings/equipment	13.9	13.3	12.5	14.1	15.7	16.7	11.6	8.6
<b>2003</b>		<b>16,700</b>	<b>8,800</b>	<b>17,800</b>	CAN\$ 2003			
				<b>20,000</b>	<b>19,400</b>	<b>17,000</b>	<b>13,300</b>	<b>10,800</b>
				%				
Shelter	72.5	74.5	72.9	72.8	73.1	70.6	71.7	72.7
Owned	39.2	10.8	33.6	43.1	44.1	42.1	40.0	31.4
Mortgage	22.0	6.3	23.4	28.2	26.2	20.0	12.5	4.0
Property tax	10.0	3.2	6.3	9.2	10.4	12.9	13.7	15.3
Maintenance	7.2	1.2	3.8	5.7	7.6	9.2	13.8	12.1
Rented	16.2	50.6	26.6	14.4	10.6	8.6	9.7	18.7
Other accommodation	3.3	3.0	1.7	2.6	4.4	4.5	3.9	3.4
Utilities	13.8	10.0	11.0	12.7	13.9	15.4	18.1	19.3
Household operation	16.3	15.1	16.2	16.4	15.4	16.1	17.3	19.7
Furnishings/equipment	11.1	10.4	10.9	10.8	11.5	13.4	11.0	7.6

Sources: Statistics Canada, Family Expenditure Survey and Survey of Household Spending; U.S. Bureau of Labor Statistics, Consumer Expenditure Survey



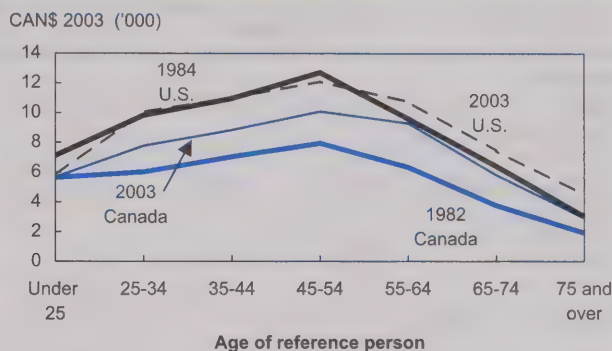
households in Canada spent less on transportation (Chart C). The elderly in both countries sharply increased their spending on private transportation from the early 1980s to 2003, more than offsetting declines in public transportation expenditures.

Canadians spent more than Americans on public transportation and its use became more extensive in retirement (when fewer households owned a vehicle). In their peak income years, Canadian households spent 8 cents of each transportation dollar on public transportation in 2003 while the elderly spent 11 cents; in the U.S., both spent around 5 cents.

### Spending on health has risen in both Canada and the U.S.

Between the early 1980s and 2003, household spending on health increased from \$1,000 to \$1,500 in Canada and from \$2,200 to \$3,000 in the U.S. (Table 5). The gap in out-of-pocket spending on health narrowed slightly but remained large, reflecting differences in the health care systems of each country. Prescription drug expenditures grew by 112% in Canada compared with 62% in the U.S. Nevertheless, Canadian households aged 25 and over continued to

**Chart C Canadians generally spend less on transportation**



Sources: Statistics Canada, Family Expenditure Survey and Survey of Household Spending; U.S. Bureau of Labor Statistics, Consumer Expenditure Survey

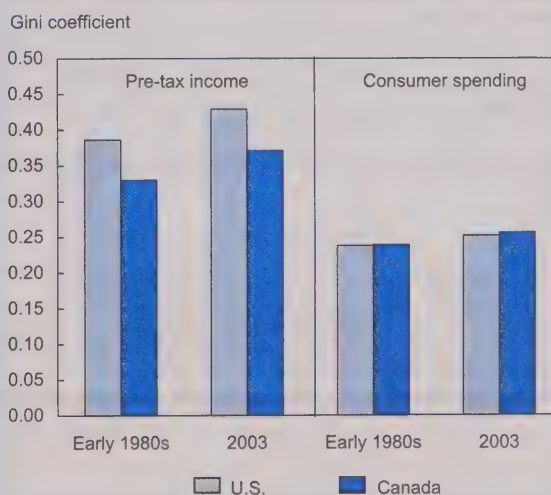
pay less than Americans. Over the same period, health insurance premiums increased from one-third to one-half of health expenditures for an American household.

### Income and spending inequality

In both Canada and the U.S., consumer spending is more equally distributed than pre-tax income, largely because the former is less sensitive to transitory business and economic conditions. Lower spending inequality may also be attributed to basic thresholds households need to maintain for housing, transportation, food, clothing, or health (depending on the number and age of members). Pre-tax income remained more unequally distributed in the U.S. in 2003, whereas the inequality in consumer spending was fairly stable.<sup>4</sup> Using the Gini coefficient as a measure of inequality, spending inequality was about 40% less than income inequality in Canada compared with 46% in the U.S.

Even though pre-tax income inequality rose by about 12% in both countries between the early 1980s and 2003, spending inequality increased only around 7%. One of the key factors was the use of credit for consumption purposes. Households in both countries have liberal access to credit through credit cards and home equity loans. As a result, they had more personal debt liability in 2003 than at the beginning of the 1980s (see note 1).

The decomposition of overall spending inequality shows that expenditure on housing was the major contributor to inequality in both countries, followed by transportation.



Of the total spending inequality in the 1980s, these two components alone accounted for 49% in Canada and 58% in the U.S.; by 2003, their relative shares had increased to 56% and 62% respectively.

**Table 4 Spending on transportation**

	Total	Age of reference person						
		Under 25	25 to 34	35 to 44	45 to 54	55 to 64	65 to 74	75 and over
<b>Canada</b>								
<b>1982</b>	<b>6,100</b>	<b>5,700</b>	<b>6,100</b>	<b>7,100</b>	<b>8,000</b>	<b>6,400</b>	<b>3,800</b>	<b>2,000</b>
				CAN\$ 2003				
Owned/leased a vehicle	80.0	69.9	85.6	89.4	87.9	79.7	66.5	41.2
				%				
Private transportation	90.5	89.8	91.1	91.8	89.9	90.3	89.2	80.2
Purchase	30.3	31.1	28.1	30.9	31.9	30.6	32.1	21.9
Rent/lease <sup>1</sup>	..	..	..	..	..	..	..	..
Operation	48.5	46.9	51.6	49.8	46.2	47.3	44.7	45.4
Insurance	11.7	11.9	11.5	11.1	11.8	12.3	12.3	13.0
Public transportation	9.5	10.2	8.9	8.2	10.1	9.7	10.8	19.8
<b>2003</b>	<b>8,100</b>	<b>5,700</b>	<b>7,800</b>	<b>8,900</b>	<b>10,200</b>	<b>9,400</b>	<b>5,900</b>	<b>3,000</b>
				CAN\$ 2003				
Owned/leased a vehicle	78.3	60.8	75.9	82.5	81.4	83.3	78.7	62.8
				%				
Private transportation	91.4	87.0	90.5	91.3	91.5	93.0	92.2	89.0
Purchase	34.5	36.4	33.7	34.2	34.0	38.4	32.4	26.4
Rent/lease <sup>1</sup>	7.8	4.2	8.7	8.0	8.5	7.1	7.1	5.0
Operation	35.2	30.9	34.4	35.8	35.1	34.4	37.1	40.4
Insurance	13.9	15.5	13.8	13.3	13.9	13.1	15.6	17.1
Public transportation	8.6	13.0	9.5	8.7	8.5	7.0	7.8	11.0
<b>United States</b>								
<b>1984</b>	<b>9,200</b>	<b>7,100</b>	<b>9,800</b>	<b>11,000</b>	<b>12,700</b>	<b>9,600</b>	<b>6,400</b>	<b>3,000</b>
				CAN\$ 2003				
Owned/leased vehicle	85.0	68.0	88.0	91.0	92.0	90.0	81.0	60.0
				%				
Private transportation	94.1	96.3	94.9	94.4	94.7	93.1	91.4	86.0
Purchase	42.1	49.3	46.6	39.2	42.7	40.4	37.6	25.8
Rent/lease <sup>1</sup>	3.1	2.4	3.2	3.7	3.0	2.9	2.7	2.9
Operation	40.7	38.5	38.3	43.2	40.9	40.8	41.5	43.3
Insurance	8.1	6.2	6.7	8.3	8.1	9.1	9.6	14.0
Public transportation	5.9	3.7	5.1	5.6	5.3	6.9	8.6	14.0
<b>2003</b>	<b>9,600</b>	<b>5,800</b>	<b>10,100</b>	<b>11,000</b>	<b>12,100</b>	<b>10,800</b>	<b>7,500</b>	<b>4,500</b>
				CAN\$ 2003				
Owned/leased a vehicle	88.0	71.0	89.0	91.0	92.0	91.0	87.0	76.0
				%				
Private transportation	95.1	96.0	95.8	95.4	95.1	94.3	93.8	93.8
Purchase	48.0	47.9	48.5	47.9	47.4	49.4	46.1	47.5
Rent/lease <sup>1</sup>	5.6	4.7	6.1	5.5	5.6	5.6	5.7	4.7
Operation	29.9	32.6	30.0	30.8	29.8	28.5	30.1	26.2
Insurance	11.6	10.8	11.2	11.2	12.3	10.7	12.0	15.3
Public transportation	4.9	4.0	4.2	4.6	4.9	5.7	6.2	6.2

1 In 1982, data on this component was not collected.

Sources: Statistics Canada, Family Expenditure Survey and Survey of Household Spending; U.S. Bureau of Labor Statistics, Consumer Expenditure Survey

In the U.S., out-of-pocket spending on health increases steadily with age. In Canada, households with a reference person aged 55 to 64 spent the most. The inter-country gap in health spending was largest among the

elderly. However, between the early 1980s and 2003, spending on health by the elderly grew faster in Canada (3 times) than in the U.S. (1.5 times), narrowing the gap somewhat.



Table 5 Spending on health

	Total	Age of reference person						
		Under 25	25 to 34	35 to 44	45 to 54	55 to 64	65 to 74	75 and over
<b>Canada</b>								
<b>1982</b>	<b>1,000</b>	<b>600</b>	<b>900</b>	<b>1,200</b>	<b>1,300</b>	<b>1,000</b>	<b>600</b>	<b>500</b>
					%			
Direct costs	63.6	58.5	58.4	62.0	63.8	63.7	80.5	79.7
Medical supplies and services	43.7	38.4	40.0	44.2	45.5	40.4	53.5	55.3
Drugs	19.9	20.1	18.4	17.9	18.2	23.3	27.0	24.4
Health insurance premiums	36.4	41.5	41.6	38.0	36.2	36.3	19.5	20.3
<b>2003</b>	<b>1,500</b>	<b>700</b>	<b>1,100</b>	<b>1,500</b>	<b>1,800</b>	<b>1,900</b>	<b>1,700</b>	<b>1,500</b>
					%			
Direct costs	66.7	69.4	60.8	64.4	66.1	65.1	72.1	78.6
Medical supplies and services	40.1	43.1	40.2	42.4	42.5	37.0	34.2	40.6
Drugs	26.6	26.3	20.6	22.0	23.7	28.2	37.9	38.0
Health insurance premiums	33.3	30.5	39.2	35.6	33.9	34.9	27.9	21.4
<b>United States</b>								
<b>1984</b>	<b>2,200</b>	<b>800</b>	<b>1,600</b>	<b>2,100</b>	<b>2,700</b>	<b>2,700</b>	<b>3,200</b>	<b>3,200</b>
					%			
Direct costs	64.7	71.2	66.6	69.1	68.4	63.9	56.0	62.1
Medical supplies and services	48.8	56.1	53.5	55.3	53.9	46.3	37.5	43.1
Drugs	15.9	15.1	13.1	13.7	14.5	17.6	18.5	19.0
Health insurance	35.3	29.1	33.2	31.0	31.6	36.1	44.0	37.9
<b>2003</b>	<b>3,000</b>	<b>700</b>	<b>1,800</b>	<b>2,600</b>	<b>3,100</b>	<b>3,800</b>	<b>4,500</b>	<b>4,800</b>
					%			
Direct costs	48.2	48.7	44.8	47.3	53.0	48.6	45.6	47.3
Medical supplies and services	28.9	30.4	31.1	33.0	34.5	28.1	22.4	22.1
Drugs	19.3	18.3	13.8	14.3	18.5	20.5	23.1	25.2
Health insurance	51.8	51.5	55.2	52.7	47.0	51.4	54.4	52.7

Sources: Statistics Canada, Family Expenditure Survey and Survey of Household Spending; U.S. Bureau of Labor Statistics, Consumer Expenditure Survey

## Summary

Compared with the early 1980s, households in 2003 in both Canada and the United States spent proportionately more on housing, transportation and health, and less on food and clothing. While the market value of homes accelerated over this period, so did the cost of furnishings, rent, household operation, and property taxes. Similarly, vehicle costs were up in 2003. An increase in health expenditures was due to the rising costs of prescribed drugs and other medical services for households in Canada and to rising health insurance premiums in the U.S.

Overall, the spending patterns of households in Canada and the U.S. were more similar in 2003 than in the early 1980s, largely because of changes in the spending patterns of Canadians. For example, Canadian households spent 11% less than Americans on housing in the early 1980s but only 4% less by 2003. Similarly the gap in transportation expenditures narrowed from 34% to 17%. Because of universal health care, households in Canada continued to spend much less on health, although the gap narrowed from 56% in the 1980s to 48% in 2003.

Households in both countries reached their maximum spending in their peak income years, age 45 to 54, after which both income and spending began to slide. Spending patterns were more alike for households in the 45-to-54 group than for those 75 and over. The elderly in both countries improved their shares of total spending, largely because of improved levels of income. More elderly lived in owned homes and drove owned vehicles in the United States, while their counterparts in Canada spent more on public transportation.

Spending patterns evolve over time and are affected by many things, including business cycles and changes in demographics. While economic integration and the ascendance of consumer spending may be eroding differences in spending patterns, distinctive models of health care delivery in Canada and the U.S. dampen the convergence.

### Perspectives

#### ■ Notes

1 In Canada, the personal savings rate declined from 20.2% in 1982 to 1.6% in 2005, while dropping in the U.S. from 7.5% in 1981 to -0.4% in 2005. Over the same period, households in both countries increased their indebtedness—from 55 cents to \$1.16 per dollar of disposable income for Canadians and from 61 cents to \$1.24 for Americans.

2 Expenditures are generally considered a better long-term measure of economic behaviour since families tend to smooth spending over time by borrowing against future income or by drawing down savings at different points in the life cycle.

3 Using the U.S. definition, expenditure on housing includes the sum of expenditures on shelter, household operation, and furnishings and equipment. Although separate data on these three components are available for both countries, the classification of items varied slightly; for instance, expenditures on telephone services are treated

under utilities in the U.S. and as part of household operations in Canada. Moreover, broader groups of expenditure are used to condense the size of statistical tables presented here.

4 As a check for the robustness of this conclusion based on Gini coefficients, Theil's T-measure of inequality when applied on grouped data for relative shares of spending by age was calculated and showed a similar conclusion.

#### ■ References

Bureau of Labor Statistics (BLS). 2005. *Consumer Expenditures in 2003*. U.S. Department of Labor. Report 986. Washington, D.C.

Snider, Bradley. 2005. *Constant Dollar Adjustment of Expenditure Data from the Survey of Household Spending*. Statistics Canada Catalogue no. 62F0026MIE, no. 005. Ottawa. Household Expenditures Research Paper series. 28 p.

<http://www.statcan.ca/english/research/62F0026MIE/62F0026MIE2005005.pdf> (accessed Aug 7, 2007).

Statistics Canada. 1984. *Family Expenditure in Canada, 1982*. Catalogue no. 62-555-XPB. Ottawa.

---. 2000. *Note to Former Users of Data from the Family Expenditure Survey*. Statistics Canada Catalogue no. 62F0026MIE-00002. Ottawa. 9 p.

<http://www.statcan.ca/english/research/62F0026MIE/62F0026MIE2000002.pdf> (accessed August 7, 2007).

---. 2005. *Spending Patterns in Canada, 2003*. Statistics Canada Catalogue no. 62-202-XIE. Ottawa. 108 p.

<http://www.statcan.ca/english/freepub/62-202-XIE/0000362-202-XIE.pdf> (accessed Aug 7, 2007).

**We welcome your views** on articles and other items that have appeared in *Perspectives*. Additional insights on the data are also welcome, but to be considered for publication, communications should be factual and analytical. We encourage readers to inform us about their current research projects, new publications, data sources, and upcoming events relating to labour and income.

Statistics Canada reserves the right to select and edit items for publication. Correspondence, in either official language, should be addressed to *Perspectives on Labour and Income*, 170 Tunney's Pasture Driveway, 9-A5 Jean Talon, Statistics Canada, Ottawa, Ontario K1A 0T6. Fax 613-951-4179; e-mail: [perspectives@statcan.ca](mailto:perspectives@statcan.ca).



# Economic integration of immigrants' children

Boris Palameta

Much has been written about the ever-widening gap in earnings and low-income rates between recent immigrants to Canada and their native-born counterparts (Picot and Hou 2003, Frenette and Morissette 2003, Aydemir and Skuterud 2004, and Picot, Hou and Coulombe 2007). However, challenges associated with the integration of immigrants often extend beyond the first generation. If the children of immigrants—the second generation—experience similar impediments to social and economic integration as their parents did, then low socioeconomic status may persist, risking the creation of persistent underclasses. For example, in some European cases, low educational attainment and low socioeconomic status in the parental generation is linked to relatively low educational attainment among immigrants' children, leading to less successful labour market outcomes (Osterberg 2000, Nielsen, Rosholm, Smith and Husted 2001, and Van Ours and Veenman 2002, 2003). Second-generation disadvantage is also postulated in the case of some immigrant communities in the United States (Zhou 1997), although empirical evidence has been limited by lack of information on parental birthplace.

For several good reasons such scenarios of second-generation disadvantage may not apply to Canada. First, immigrants are on average just as educated or more educated than the native-born, largely because education weighs heavily in the criteria used for admission into Canada. Second, the educational attainment of immigrants' children tends to exceed that of their peers with two native-born parents (Boyd and Grieco 1998, Boyd 2002, and Hansen and Kucera 2004). Third, Canada is one of only two OECD countries (Australia is the other) where the second generation performs as well as those with native-born parents on standardized math and reading tests given to 15-year-olds (OECD 2007).<sup>1</sup> Fourth, the correlation

between parental earnings and the eventual earnings of their children tends to be low in Canada—for immigrants and non-immigrants alike (Aydemir, Chen and Corak 2005). Therefore, even if immigrant earnings deficits in relation to the native-born are increasing, it does not necessarily mean that immigrants' children will be worse off than the children of Canadian-born parents.

The high educational attainment of the second generation in Canada—sometimes termed the 'main legacy of immigration'—is often used to explain the higher earnings and wages enjoyed by the second generation, relative to those of third generation and higher Canadians (Hum and Simpson 2004). Returns on education may, however, vary by parental region of origin (Aydemir, Chen and Corak 2005).

Most previous research on the second generation in Canada has focused on older cohorts, most of whose parents came from the United States, the United Kingdom or Europe prior to the changes in Canada's *Immigration Act* in the 1960s. These changes abolished national origin as a criterion of admission and ushered in a new era of immigration from non-traditional source countries, primarily in Asia. This paper focuses on young second-generation Canadians, born between 1967 and 1982, many of whose parents would have come from non-traditional source countries.

The family characteristics, geographical distribution, educational attainment, and labour force attachment of second-generation Canadians, aged 17 to 29, are compared with those of their peers with native-born parents (see *Data source and definitions*). In addition, wages and earnings are examined over a six-year period among members of the cohort who are working rather than going to school. Regression models are used to examine the role variables such as education, geography and childbirth play in explaining earnings differences between second-generation and other Canadian youth. Looking at 17- to 29-year-olds may yield a somewhat incomplete picture of new labour

---

Boris Palameta is with the Social Research and Demonstration Corporation (SRDC). He can be reached at 613-237-2945 or [bpalameta@srdc.org](mailto:bpalameta@srdc.org).

## Data source and definitions:

The **Survey of Labour and Income Dynamics (SLID)** covers roughly 97% of the Canadian population, excluding those who live in the territories, in institutions, on Indian reserves or in military barracks. Each panel of respondents, approximately 15,000 households and 30,000 adults, is surveyed for six consecutive years. A new panel is introduced every three years, so two panels always overlap. Although three complete panels are available (1993 to 1998, 1996 to 2001, and 1999 to 2004), only the last two were used since parents' country of birth was not asked prior to 1996.

The sample (9,163) consisted of persons aged between 17 and 29 in the first year of the panel, divided into groups based on their own and their parents' place of birth:

**First generation, recent immigrants**, 5.5% of the population. Born outside Canada, had lived in Canada less than 10 years when the panel began. Most arrived as adolescents.

**First generation, established immigrants**, 5.8% of the population. Born outside Canada, had lived in Canada 10 or more years when the panel began. Most arrived under the age of 12 (although a few arrived older).

**Second generation**, 10.1% of the population. Born in Canada to two immigrant parents.

**The '2.5 generation'**, 8.4% of the population. Born in Canada to one immigrant parent and one native-born parent.

**Third generation and higher Canadians**, 64.8% of the population. Born in Canada to two native-born parents. (Because of their different educational attainments and age/earnings profiles, aboriginals are excluded.)

The remaining 5.4% of the population was unclassified because either their own place of birth or their parents' place of birth was unknown.

In addition to descriptive statistics comparing the groups above, based on their characteristics in the first year they were interviewed, models are used to compare earnings of the groups over the six years in sample.

Significance testing was conducted using bootstrap weights and SUDAAN version 9.0, to account for the complex design of SLID.

force entrants, since the outcomes of those who were in school at those ages are not captured. Nevertheless, young cohorts are often used to analyze second-generation labour market outcomes (for example, Maani 1994, Nielsen, Rosholm, Smith and Husted 2001, and Van Ours and Veenman 2002), since children of immigrants from non-traditional source countries are less represented in older samples.

## Second-generation youth less spread out geographically than peers with native-born parents

All groups averaged between 23 and 24 years of age when they were first interviewed (Table 1), so differences for other characteristics are not likely to be age-related.

Almost 9 in 10 young recent immigrants—and 6 in 10 young established immigrants—had a mother tongue other than English or French. A substantial minority (40%) of second-generation Canadians also had a mother tongue other than either of the two official languages. The majority of young immigrants were part of a visible minority, as were a substantial minority (30%) of those with two immigrant parents. Lin-

guistically and ethnically, those with only one immigrant parent resembled those with native-born parents more than they did those with two immigrant parents—only 4% were visible minorities, and less than 2% had a mother tongue other than English or French.

Immigrant and second-generation youth are much more concentrated geographically than other Canadian youth. They are more likely to live in Ontario or British Columbia, and less likely than other Canadians to live in the Atlantic provinces, Saskatchewan or Quebec. In fact, for third-generation and higher young people, Quebec has the highest numbers followed by Ontario; by far the most immigrant and second-generation youth, however, are found in Ontario, followed by British Columbia. Ontario and British Columbia are the two biggest immigrant-receiving provinces, and most of their children choose to stay there.<sup>2</sup>

The overwhelming majority of young immigrants and youth with two immigrant parents, as well as a slight majority of youth with one immigrant parent, live in large urban centres. By contrast, almost 3 in 10 young Canadians with native-born parents live in small towns or rural areas.



**Table 1 Basic demographics of immigrants' children**

	First generation		Second generation		Third generation and higher
	Recent immigrant	Established immigrant	Two immigrant parents	One immigrant parent	
<b>Average age</b>	23.7	23.7	22.6	22.9	23.0
<b>Mother tongue</b>			%		
English	11.7*	37.7*	57.2*	92.2*	65.5
French	1.2*	3.9*	2.9*	6.0*	33.4
Other	86.3*	58.0*	39.9*	1.7	1.1
<b>Visible minority</b>	74.9*	52.4*	29.5*	4.4*	0.5
<b>Region, year 1</b>					
Atlantic	1.0*	2.0*	1.5*	3.8*	12.2
Quebec	13.4*	14.5*	10.5*	9.5*	31.4
Ontario	53.6*	52.2*	59.7*	44.4*	27.0
Manitoba	2.5	1.8*	4.0	3.9	4.3
Saskatchewan	1.1*	0.7*	0.9*	1.8*	4.3
Alberta	7.8	10.2	8.2	12.2	10.6
British Columbia	20.6*	18.6*	15.3	24.5*	10.3
<b>Residence, year 1</b>					
Rural	0.8*	2.3*	2.8*	7.6*	14.8
Urban					
Less than 30,000	1.4*	3.7*	2.9*	9.0*	14.9
30,000 to 99,999	2.7*	6.6*	3.8*	11.2	12.1
100,000 to 499,999	9.4*	9.9*	12.9*	17.5	19.0
500,000 or more	85.6*	77.6*	77.5*	54.7*	39.0

\* Significantly different from the third generation and higher, at the 0.05 level or less.

Note: Some categories may not sum to 100% because of missing values.

Source: Statistics Canada, Survey of Labour and Income Dynamics, 1996-2001 and 1999-2004

### Second-generation youth more likely to live with parents, delay marriage and childbirth

Young men and women with two immigrant parents were more likely than those with two native-born parents to be living with their parents. Furthermore, although the majority of third-generation and higher youth who lived with their parents in year 1 moved out at some point in the next five years, most second-generation men and half of second-generation women remained with their parents for the full six years (Table 2).

Consistent with living with their parents longer, second-generation youth also delay marriage and having children relative to those with native-born parents. By the final year they were interviewed, 6 in 10 third-generation and higher women had been married at some point in their lives, and almost half had had a child. By comparison, less than half of women with two immigrant parents had been married and only one-third had had a child. Among second-generation men with two immigrant parents, 7 in 10 had never been married by the final year they were interviewed, and only 2 in 10 had had a child.

These differences are not age-related, since average ages were similar.

### Second-generation youth more educated, less likely to drop out of high school

The groups differed little in educational activity. Between 45 and 55% of young women were students when first interviewed, with no significant differences between groups. Among young men, only those with two immigrant parents were significantly more likely than the third generation to be students.

Because the education of many in the sample was ongoing, differences in educational attainment were examined only for those who were not full- or part-time students. Consistent with previous studies on older cohorts, children of immigrants tended to be more educated than those with native-born parents. Although the results on educational attainment are based on the first year in sample, and thus represent only those who were not in school at the time (less than half of the population), a similar pattern is found if year 6—by which time the majority of the population had completed their schooling—is used.

Male children, with either one parent or both parents being immigrants, were significantly less likely than the third generation to drop out of high school, although no significant differences were seen between groups in the proportion of university graduates.<sup>3</sup>

Young women with two immigrant parents had a remarkably low rate of dropping out of high school, significantly lower than all other groups; but again, no significant differences were seen for university graduation.<sup>4</sup>

Table 2 Family and educational characteristics of immigrants' children

	First generation		Second generation		Third generation and higher
	Recent immigrant	Established immigrant	Two immigrant parents	One immigrant parent	
	%				
<b>Men</b>					
Living with parents, year 1	70.4*	66.1*	73.4*	61.1	51.8
Moved out in the subsequent 5 years	16.9*	36.5*	31.8*	50.5*	64.5
Single/never married, year 6	58.5	61.5	70.5*	59.3	51.9
Ever had, adopted or raised a child, year 6	31.2	24.7	18.7*	25.0	32.4
<b>Women</b>					
Living with parents, year 1	39.2	52.5	65.8*	42.9	43.5
Moved out in the subsequent 5 years	40.3*	34.4*	50.7*	58.3	64.5
Single/never married, year 6	34.6	45.7	53.3*	43.7	39.3
Ever had, adopted or raised a child, year 6	60.9*	38.0	33.3*	37.8*	47.2
<b>Educational activity, year 1<sup>1</sup></b>					
Men	57.3	52.5	59.8*	53.4	46.2
Women	51.5	54.3	53.4	53.9	48.8
<b>Educational attainment<sup>2</sup></b>					
<b>Men</b>					
Less than high school	25.1	16.1	10.7*	9.0*	20.5
High school diploma	20.5	25.2	28.2	32.9	25.8
Some postsecondary	11.0	16.9	13.2	25.1	16.4
Non-university certificate	31.3	26.5	30.8	17.8	27.3
University degree	12.2	15.3	16.2	14.8	9.9
<b>Women</b>					
Less than high school	19.6	13.5	1.7*	12.0	14.4
High school diploma	30.1	21.4	25.9	19.2	22.5
Some postsecondary	20.8	7.2*	17.4	18.9	18.2
Non-university certificate	19.8	36.1	32.5	29.3	31.3
University degree	8.2	21.8	21.2	18.7	13.3
<b>Years of schooling<sup>2</sup></b>					
Men	13.0	13.4	13.8*	13.1	12.8
Women	12.4	13.8	14.6*	13.9	13.3

\* Significantly different from the third generation and higher, at the 0.05 level or less.

1 Full- or part-time students.

2 Excluding full- and part-time students.

Note: Some categories may not sum to 100% because of missing values.

Source: Statistics Canada, Survey of Labour and Income Dynamics, 1996-2001 and 1999-2004

Overall, both male and female youths with two immigrant parents averaged one more year of education than their counterparts with native-born parents.

### Second-generation women more likely to be employed, have higher earnings

Three measures of labour force participation were compiled: the proportion employed all year during the first year in sample, the proportion with at least one spell of unemployment during the year, and the pro-

portion who did not work (were unemployed or not in the labour force) all year. Full-time and part-time students were excluded (Table 3).

No significant differences existed between groups of young men, for any of the three measures. For young women, on all three measures, those with two immigrant parents did significantly better than those with native-born parents—they were more likely to work all year, less likely to have a period of unemployment, and less likely not to work all year.



**Table 3 Labour force participation and earnings of immigrants' children**

	First generation		Second generation		Third generation and higher
	Recent immigrant	Established immigrant	Two immigrant parents	One immigrant parent	
<b>Men</b>			%		
Employed all year	65.2	73.9	66.7	66.5	67.1
Unemployed at least once in year	19.9	16.1	27.0	25.0	24.9
No work all year <sup>1</sup>	F	F	4.0	8.8	6.9
<b>Median earnings</b>			2004 \$		
Hourly, main job	11.03	13.59	14.12	14.07	13.08
Annual, all jobs ('000)	23.8	27.2	28.7	25.9	25.5
<b>Women</b>			%		
Employed all year	32.2*	71.2	75.7*	59.0	55.6
Unemployed at least once in year	25.8	13.3	9.6*	26.6	21.9
No work all year <sup>1</sup>	48.8*	13.9	9.8*	12.1	20.2
<b>Median earnings</b>			2004 \$		
Hourly, main job	9.28*	14.58	15.92*	12.37	11.26
Annual, all jobs ('000)	15.4	23.6	27.5*	21.5	18.2

\* Significantly different from the third generation and higher, at the 0.05 level or less.

<sup>1</sup> Unemployed or not in the labour force.

Note: First year in sample and excluding full- and part-time students.

Source: Statistics Canada, Survey of Labour and Income Dynamics, 1996-2001 and 1999-2004

Hourly (main job) and annual (all jobs) earnings were tabulated for all groups, for the first year they were interviewed. Full-time and part-time students, and those with self-employment earnings, were excluded. No significant differences were found for young men for either hourly or annual earnings. For women, however, the pattern seen in educational attainment and labour force participation repeated—those with two immigrant parents did better, with significantly higher earnings.

Higher earnings are commonly attributed to higher levels of education. However, in this case, other variables such as geography need to be investigated. Ontario and

British Columbia, where second-generation youths are concentrated, may provide better-paying jobs in larger firms. Although the differences in educational attainment between second- and third-generation women are not that large, the former women might be getting a higher return on their education because of where they live.

Other important factors might be marital status and presence of children. Delaying marriage and child-birth generally has positive effects on women's earnings, and second-generation young women were less likely to have ever been married or had children than their third- and higher generation counterparts.

In order to investigate these possibilities, multilevel growth models were specified. Like regression models, multilevel models allow the effect of any one variable to be examined while all other variables are held constant. They offer the additional advantage of estimating the dependent variable not just at one point in time, but also its rate of change over time. For example, second- and third-generation Canadians can be compared not only in terms of their average earnings at the start point (year 1) but also their average rates of earnings growth over the full six-year period (see *Multilevel growth models*).

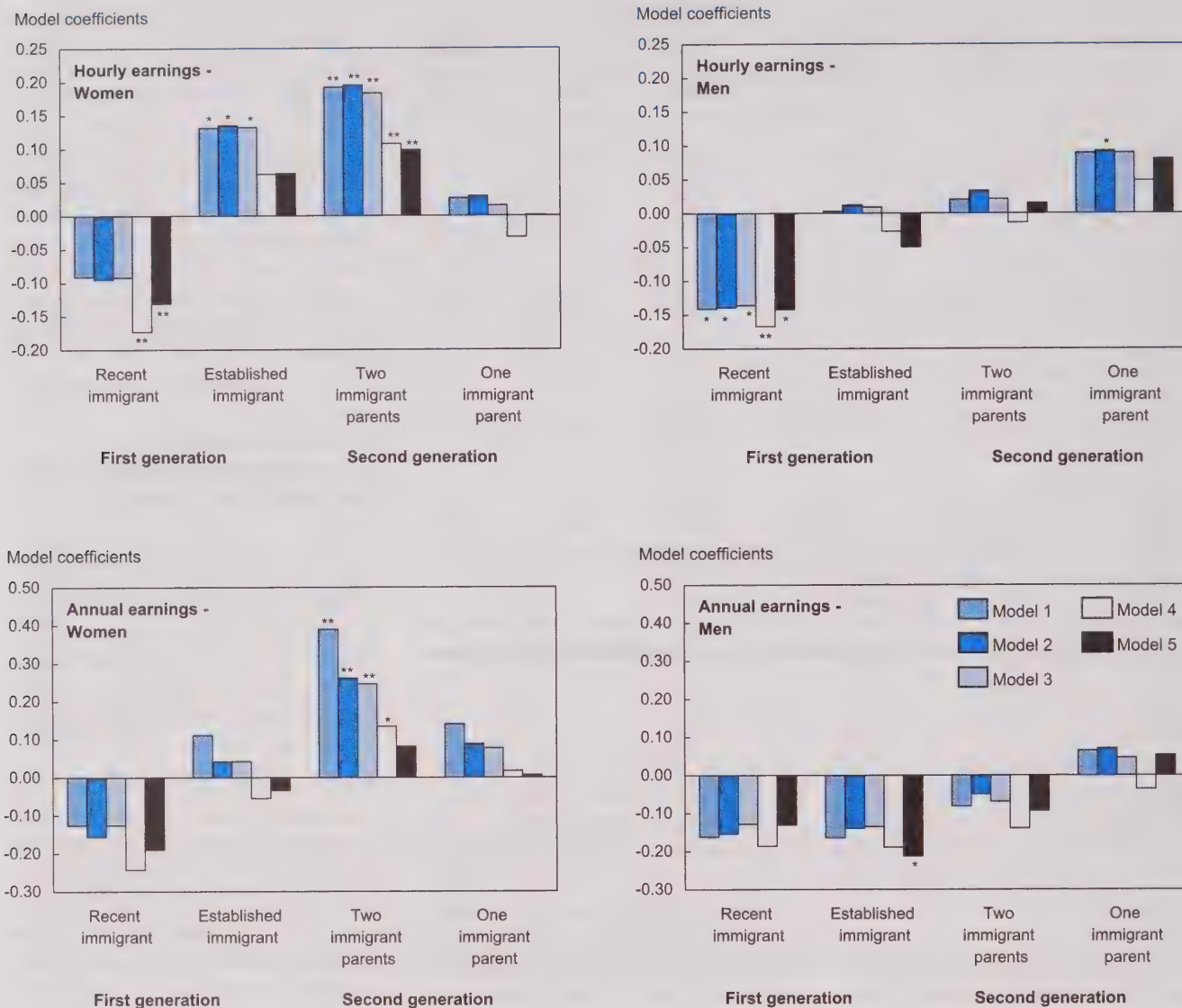
### Earnings advantage for young women with two immigrant parents

Each model compares hourly and annual earnings of each of the various immigrant and second-generation groups with those of their third-generation and higher counterparts, once other factors (such as age, education and province) have been taken into account.<sup>7</sup>

With only age and panel taken into account (Model 1), established immigrant women, as well as women with two immigrant parents, have significantly higher year 1 hourly earnings than their counterparts with two native-born parents—roughly 13% and 19% higher, respectively (Chart A).<sup>8</sup> Furthermore, since rates of earnings growth among the various groups are not significantly different from one another, these initial advantages are maintained over the six-year period.<sup>9</sup>

Which factors are responsible for the relative hourly earnings advantage among established immigrant women and women with two

**Chart A Among women aged 17 to 29, those with two immigrant parents had the best earnings**



\* Significantly different from third generation and higher at the 0.05 level or less.

\*\* Significantly different from third generation and higher at the 0.01 level or less.

Note: First year in sample and excluding full- and part-time students.

Source: Statistics Canada, Survey of Labour and Income Dynamics, 1996-2001 and 1999-2004

immigrant parents? The advantage present in Model 1 is maintained when marital status and children are added (Model 2)—meaning that the advantage cannot be explained by differences between groups in marital

status or presence of children. When education is added (Model 3), advantage dips slightly (from 19% to 18%) for young women with two immigrant parents, perhaps reflecting their lower high school dropout rate.



However, when geographic variables (province/region, rural/urban, and urban size) are added (Model 4), the earnings advantage of established immigrant women is no longer statistically significant, and among women with two immigrant parents it drops to about 10%. Thus, a little under half of the wage advantage among young women with two immigrant parents can be accounted for by their tendency to cluster in large urban centers in Ontario and British Columbia, while young women with native-born parents are more evenly distributed, with sizeable populations living in smaller cities and rural areas in less economically prosperous regions such as Quebec and Atlantic Canada.

Geographic clustering also resulted in higher hourly earnings among young recent immigrant women than they would have had, had they been more evenly distributed. In Models 1 through 3, their wages are not significantly different from those of women with native-born parents. However, when geographic clustering is accounted for in Model 4, their disadvantage becomes evident.

Young women with two immigrant parents also had a large annual earnings advantage relative to those with native-born parents. With nothing other than age and panel accounted for (Model 1), their earnings were on average 39% greater. Furthermore, the rates of growth in annual earnings were not significantly different for the two groups, meaning that the advantage was maintained for the entire six-year period of the study.

A large part of the annual earnings advantage arises because women with two immigrant parents are less likely to have children than their third-generation and higher counterparts. When marital status and the presence of children are accounted for, the earnings advantage drops from 39% to 26%.<sup>10</sup> It drops slightly to 25% when education is added, but drops sharply to 13% when geographic variables are added, indicating once again the effect of geographic clustering. Job and employer characteristics, such as working full-time, working in a large firm, unionization, occupation and industry, also account for some of the earnings advantage. When these characteristics are added (Model 5), the difference between young women with two immigrant parents and their counterparts with native-born parents is no longer statistically significant.

### **Among young men, few differences between those with immigrant or native-born parents**

Apart from a 9% advantage in Model 2 among young men with one immigrant parent, no significant differences in hourly earnings were seen between young men with immigrant parents and those with native-born parents. Young recent immigrant men, however, had a 14 to 17% hourly earnings disadvantage compared with those with native-born parents. Since rates of growth are no different for the two, this disadvantage persisted throughout the six-year period.

Little evidence was found for statistically significant differences in annual earnings between the groups. Earnings coefficients were consistently large and negative among immigrants—both recent and established—and young men with two immigrant parents, but the large variability in earnings within each of these groups prevented the results from attaining statistical significance. With all other variables accounted for (Model 5), established immigrant men had significantly lower year 1 annual earnings (roughly 21% lower) than those with native-born parents. However, this was offset by the roughly 5% higher rate of earnings growth among established immigrant men, allowing them to catch up with their third-generation and higher counterparts.

### **Some young visible minority men with two immigrant parents at earnings disadvantage**

Some census data suggest that earnings returns to education among 25- to 37-year-old Canadian men with immigrant parents vary by parental region of origin (Aydemir, Chen and Corak 2005). For example, those with parents from Eastern or Southern Europe, and those with parents from the Caribbean, Central and South America or Oceania earned 8% and 28% less, respectively, than those with parents from traditional source countries in North America, and Northern or Western Europe, despite having almost equal levels of education. Furthermore, those with parents from Africa or Asia also earned 8% less than those with parents from traditional source countries, despite having nearly twice the rate of university graduation. Among women, earnings were more in line with education—those with parents from Africa or Asia had the highest rates of university graduation and also earned the most.

## Multilevel growth models

### The sample

To investigate differences in hourly and annual earnings among the different groups, a sub-sample of non-students with paid employment in year 1 was selected from the original sample of 17- to 29-year-olds. This sub-sample had high labour force attachment, with an average of around five years of paid employment over the six-year period and little variability between groups.

### Average number of years of paid employment

	Men	Women
Recent immigrant	4.7	4.8
Established immigrant	5.2	4.9
Native-born		
Two immigrant parents	5.0	5.0
One immigrant parent	5.1	5.2
Native-born parents	5.2	5.1

### Multilevel models

Multilevel models are ideal for investigating continuous outcomes (like earnings) whose values change systematically over time.

Why multilevel? At the first level are individual growth trajectories—in the simplest case of linear growth, each person's trajectory can be described with an intercept (starting point) and a slope (linear rate of change). At the second level are average trajectories, with individual and group deviations from the average. This allows differences in intercept and slope to be examined.

For example, consider the following linear growth model for hourly earnings (wage):

#### Level 1:

$$Y_{ij} = \beta_{0i} + \beta_{1i}(\text{TIME}_{ij}) + \varepsilon_{ij}$$

where  $Y_{ij}$  is logwage,  $\beta_{0i}$  is the intercept (person  $i$ 's initial logwage),  $\text{TIME}_{ij}$  represents the number of years since the initial interview and  $\beta_{1i}$  is the slope (the rate of change in logwage from year to year).

#### Level 2:

$$\beta_{0i} = \gamma_{00} + \mu_{0i}$$

where  $\gamma_{00}$  is the mean logwage and  $\mu_{0i}$  is person  $i$ 's deviation from the mean.

$$\beta_{1i} = \gamma_{10} + \mu_{1i}$$

where  $\gamma_{10}$  is the mean slope (growth in logwage) and  $\mu_{1i}$  is person  $i$ 's deviation from the mean.

#### Combining level 1 and level 2:

$$Y_{ij} = (\gamma_{00} + \mu_{0i}) + (\gamma_{10} + \mu_{1i})\text{TIME}_{ij} + \varepsilon_{ij}$$

#### Multiplying and rearranging:

$$Y_{ij} = [\gamma_{00} + \gamma_{10}(\text{TIME}_{ij})] + [\mu_{0i} + \mu_{1i}(\text{TIME}_{ij})] + \varepsilon_{ij}$$

$[\gamma_{00} + \gamma_{10}(\text{TIME}_{ij})]$  represents the average trajectory  
→ fixed effects

$[\mu_{0i} + \mu_{1i}(\text{TIME}_{ij})]$  represents individual deviations from the average trajectory → random effects

### Adding time-invariant predictors:

Let  $\text{IMMPAR} = 0$  if Canadian-born parents, 1 if immigrant parents.

$$\text{Level 1: } Y_{ij} = \beta_{0i} + \beta_{1i}(\text{TIME}_{ij}) + \varepsilon_{ij}$$

$$\text{Level 2: } \beta_{0i} = \gamma_{00} + \gamma_{01}(\text{IMMPAR}_i) + \mu_{0i}$$

where  $\gamma_{00}$  is the mean intercept for people with Canadian-born parents and  $(\gamma_{00} + \gamma_{01})$  is the mean intercept for people with immigrant parents

$$\beta_{1i} = \gamma_{10} + \gamma_{11}(\text{IMMPAR}_i) + \mu_{1i}$$

where  $\gamma_{10}$  is the mean slope for people with Canadian-born parents and  $(\gamma_{10} + \gamma_{11})$  is the mean slope for people with immigrant parents

### Combining levels 1 and 2, multiplying and rearranging:

$$Y_{ij} = [\gamma_{00} + \gamma_{10}(\text{TIME}_{ij}) + \gamma_{01}(\text{IMMPAR}_i) + \gamma_{11}(\text{IMMPAR}_i \cdot \text{TIME}_{ij})] + [\mu_{0i} + \mu_{1i}(\text{TIME}_{ij})] + \varepsilon_{ij}$$

### Focusing on the fixed effects:

$\gamma_{00}$  = the average intercept for those with Canadian-born parents

$\gamma_{10}$  = the average slope for those with Canadian-born parents

$\gamma_{01}$  = the average difference in intercept between those with Canadian-born parents and those with immigrant parents

$\gamma_{11}$  = the average difference in slope between those with Canadian-born parents and those with immigrant parents

### Adding time-varying predictors:

Let  $\text{UNIV} = 0$  if not a university graduate, 1 if a university graduate.

$$\text{Level 1: } Y_{ij} = \beta_{0i} + \beta_{1i}(\text{TIME}_{ij}) + \beta_{2i}(\text{UNIV}_{ij}) + \beta_{3i}(\text{UNIV}_{ij} \cdot \text{TIME}_{ij}) + \varepsilon_{ij}$$

$$\text{Level 2: } \beta_{0i} = \gamma_{00} + \gamma_{01}(\text{IMMPAR}_i) + \mu_{0i}$$

$$\beta_{1i} = \gamma_{10} + \gamma_{11}(\text{IMMPAR}_i) + \mu_{1i}$$

$$\beta_{2i} = \gamma_{20}$$

$$\beta_{3i} = \gamma_{30}$$

### The composite model would be:

$$Y_{ij} = [\gamma_{00} + \gamma_{10}(\text{TIME}_{ij}) + \gamma_{01}(\text{IMMPAR}_i) + \gamma_{11}(\text{IMMPAR}_i \cdot \text{TIME}_{ij}) + \gamma_{20}(\text{UNIV}_{ij}) + \gamma_{30}(\text{UNIV}_{ij} \cdot \text{TIME}_{ij})] + [\mu_{0i} + \mu_{1i}(\text{TIME}_{ij})] + \varepsilon_{ij}$$

### Focusing on the fixed effects:

$\gamma_{00}$  = the average initial (log)wage for non-university graduates with Canadian-born parents

$\gamma_{00} + \gamma_{01}$  = the average initial wage for non-university graduates with immigrant parents

$\gamma_{00} + \gamma_{20}$  = the average initial wage for university graduates with Canadian-born parents

$\gamma_{00} + \gamma_{01} + \gamma_{20}$  = the average initial wage for university graduates with immigrant parents

$\gamma_{10}$  = the average rate of wage growth for non-university graduates with Canadian-born parents

$\gamma_{10} + \gamma_{11}$  = the average rate of wage growth for non-university graduates with immigrant parents



### Multilevel growth models (concluded)

$\gamma_{10} + \gamma_{30}$  = the average rate of wage growth for university graduates with Canadian-born parents

$\gamma_{10} + \gamma_{11} + \gamma_{30}$  = the average rate of wage growth for university graduates with immigrant parents

Initial levels and growth rates in both hourly (pure wage rate) and annual earnings (wage rate plus hours worked) were estimated. Because men and women tend to have different rates of earnings growth, their outcomes were estimated separately. Each of the four outcomes (men's hourly and annual earnings, and women's hourly and annual earnings) was estimated with five models.

**Model 1** used the predictors generations in Canada, age in year 1, and panel (1996 to 2001 or 1999 to 2004). Subsequent models added time-varying predictors: **Model 2**, marital status (and, for women, the presence of children<sup>5</sup>); **Model 3**, education; **Model 4**, geographic characteristics (province/region, rural/urban residence,

and urban size); and **Model 5**, job/employer characteristics (firm size, unionization, occupation, industry, and full-/part-time status).

In addition to new variables, each model kept all of the variables of the one preceding it, so that Model 5 contained the full set of predictors. Each of the models also included a term testing for linear growth (time) and interactions between each of the other variables and time to test for differences in growth rates. A quadratic term (time squared) was added to each model to test for decelerating rates of growth.<sup>6</sup> Possible interactions between generations in Canada and other predictors such as education, province, urban size and presence of children were investigated, but interaction terms were not statistically significant and so were discarded from the models. For each model, only fixed effects are reported since random effects cannot be estimated accurately using weighted data from a complex survey design.

Small sample sizes in the current study prevent dividing those with two immigrant parents into groups based on parental region of origin. However, visible minority status is a useful proxy, since most of those with parents from non-traditional source countries other than Eastern or Southern Europe are likely to be visible minorities; in contrast, most of those with parents from traditional source countries are not likely to be visible minorities.

With all other variables accounted for (Model 5), young visible minority men with two immigrants parents earned roughly 38% less in year 1 than their counterparts with native-born parents (Chart B).<sup>11</sup> Men with two immigrant parents who were not visible minorities, on the other hand, were no different from those with native-born parents. Among young women with two immigrant parents, magnitudes of earnings coefficients were very similar between visible minorities and those who were not visible minorities—neither was significantly different from those with native-born parents.

### Conclusion

Young second-generation Canadians aged 17 to 29—that is, young men and women born in Canada to two immigrant parents—differ from those with two native-born parents in several ways. Some of these differences may influence their earnings as they enter the labour market. Consistent with previous research on older populations, young men and women with

**Chart B Visible minority men aged 17 to 29 had the lowest annual earnings**



\* Significantly different from third generation and higher at the 0.05 level or less.

Note: First year in sample and excluding full- and part-time students.

Source: Statistics Canada, Survey of Labour and Income Dynamics, 1996-2001 and 1999-2004

two immigrant parents had more years of schooling than their counterparts with native-born parents, largely as a result of significantly lower high school dropout rates. However, differences in earnings between young second-generation men and women

and their third- and higher generation counterparts were largely accounted for by factors other than education in a sub-population with a high rate of labour force participation over the six-year period of the study.

With education accounted for, young women with two immigrant parents still had significantly higher hourly and annual earnings than those with native-born parents, over the entire six-year period. Roughly half of the hourly earnings advantage can be explained by geographic distribution. Three-quarters of young Canadians with two immigrant parents are concentrated in Ontario and British Columbia, and more than three-quarters live in large urban centres—in contrast, half of their counterparts with native-born parents live in less economically prosperous regions such as Atlantic Canada, Quebec, Manitoba and Saskatchewan, and about 60% live in smaller cities, small towns and rural areas.

A large part of the annual earnings advantage among young women with two immigrant parents is also a likely product of geographic clustering. However, another large part is because they were less likely to have been married or had children. By the end of the six-year period (when they had reached the ages of 22 to 34), less than half of women with two immigrant parents had ever been married, and only a third had given birth to, adopted, or raised children. In contrast, over 60% of those with native-born parents had been married, and close to half had had children.

The situation is quite different for young-second generation men. They displayed little evidence of an hourly or annual earnings advantage relative to their third- and higher generation counterparts. In fact, generalizations about young second-generation men are difficult to make, since they tend to be more heterogeneous in terms of earnings than their female counterparts. Part of the extra heterogeneity arises because visible minority status has no bearing on women's earnings, but it has a large effect on men's earnings.

Among young men born in Canada to two immigrant parents, visible minorities fare markedly worse—everything else being equal, their annual earnings are significantly lower than those of young men with native-born parents. Second-generation men who are not visible minorities, on the other hand, are no different from those with native-born parents—in fact, some evidence suggests that the hourly earnings of those with one immigrant parent might be higher.

These results are consistent with census findings on an older population (aged 25 to 37), which showed that second-generation men whose parents came from Africa, Asia, the Caribbean, or Central and South America, and most of whom are visible minorities, had equal or greater levels of education but lower earnings than those with parents from traditional source countries in North America, and Northern and Western Europe (Aydemir, Chen and Corak 2005).

Explanations of lower earnings among visible minority immigrants usually centre on language deficits and lack of recognition of foreign educational credentials or work experience. These explanations are unlikely to apply to their children, born and educated in Canada. Other possible explanations based on cultural barriers, job networks and systemic discrimination are outside the scope of this paper because data are difficult to obtain (however see Beck, Reitz and Weiner 2002). Statistics Canada's Ethnic Diversity Survey shows that on many indicators of social cohesion and integration (such as trust, sense of belonging and perceived discrimination), visible minorities score lower in the second generation than they did in the first, suggesting that even if economic prospects are improving for many in the second generation, social inclusion is not improving (Reitz and Banerjee 2007).

### Perspectives

#### ■ Notes

- 1 Performance deficits among second-generation students relative to their peers with native-born parents are particularly high in Germany, Belgium, the Netherlands, Switzerland, Austria and France.
- 2 The regional distribution of the sub-population of young people living apart from their parents is similar to that shown in Table 1.
- 3 Although the magnitude of difference between some pairs of groups appears to quite large, a large error is associated with these estimates, due to small sample size.
- 4 The pattern of no significant differences in university graduation between those with two immigrant parents and those with two native-born parents continued to hold through year 6. In addition, even when only degrees higher than a bachelor's were considered, no significant differences were found between groups in year 1 or year 6.
- 5 For men, the presence of children was very closely correlated with marital status.



6 The time-squared term was not significantly different from zero in the models estimating women's hourly and annual earnings growth, and therefore was removed from these models.

7 For the sake of brevity and presentation, coefficients associated with other factors in the models are not presented. In general, they tend to conform to familiar patterns of results. For example, older age groups tend to have higher initial hourly earnings, but slower rates of growth, while university education is associated with both higher initial hourly earnings and faster growth. Complete results of all models are available from the author.

8 When logwage is estimated, the coefficient associated with a particular group is a good approximation of the average percentage difference in wage between that group and the reference group.

9 Since rates of earnings growth rarely differ significantly between groups, they are not presented, but are available from the author.

10 Having children had little or no effect on hourly earnings, but a large negative effect on hours worked (and therefore annual earnings).

11 The relatively large coefficient associated with visible minority earnings growth (.060) suggests that some members of this group may catch up somewhat in subsequent years. However, the heterogeneity within the group was sufficient to prevent the result from achieving statistical significance.

## ■ References

- Aydemir, Abdurrahman, Wen-Ho Chen and Miles Corak. 2005. *Intergenerational Earnings Mobility Among the Children of Canadian Immigrants*. Statistics Canada Catalogue no. 11F0019MIE – No. 267. Ottawa. Analytical Studies Branch Research Paper Series, no. 267, 44 p. <http://www.statcan.ca/english/research/11F0019MIE/11F0019MIE2005267.pdf> (accessed September 20, 2007).
- Aydemir, Abdurrahman and Mikal Skuterud. 2004. *Explaining the Deteriorating Entry Earnings of Canada's Immigrant Cohorts: 1966-2000*. Statistics Canada Catalogue no. 11F0019MIE – No. 225. Ottawa. Analytical Studies Branch Research Paper Series, no. 225, 31 p. <http://www.statcan.ca/english/research/11F0019MIE/11F0019MIE2004225.pdf> (accessed September 20, 2007).
- Beck, J. Helen, Jeffrey G. Reitz and Nan Weiner. 2002. "Addressing Systemic Racial Discrimination in Employment: The Health Canada Case and Implications of Legislative Change." *Canadian Public Policy*. Vol. 28, no. 3. p. 373-394.
- Boyd, Monica. 2002. "Educational Attainments of Immigrant Offspring: Success or Segmented Assimilation?" *International Migration Review*. Vol. 36, no. 4, p. 1037-1060.
- Boyd, Monica and Elizabeth Grieco. 1998. "Triumphant Transitions: Socioeconomic Achievements of the Second Generation in Canada." *International Migration Review*. Vol. 32, no. 4, p. 853-876.
- Frenette, Marc and René Morissette. 2003. *Will They Ever Converge? Earnings of Immigrant and Canadian-born Workers over the Last Two Decades*. Statistics Canada Catalogue no. 11F0019MIE – No. 215. Ottawa. Analytical Studies Branch Research Paper Series, no. 215, 20 p. <http://www.statcan.ca/english/research/11F0019MIE/11F0019MIE2003215.pdf> (accessed September 20, 2007).
- Hansen, Jörgen and Miroslav Kučera. 2004. *The Educational Attainment of Second Generation Immigrants in Canada: Evidence from SLID*. Unpublished manuscript, Concordia University, Montreal.
- Hum, Derek and Wayne Simpson. 2004. *The Legacy of Immigration: The Labour Market Performance of the Second Generation*. Prairie Centre of Excellence for Research on Immigration and Integration Working Paper Series, no. WP06-04. 8 p.
- Maani, Sholeh A. 1994. "Are Young First and Second Generation Immigrants at a Disadvantage in the Australian Labor Market?" *International Migration Review*. Vol. 28, no. 4, p. 865-882.
- Nielsen, Helena Skyt, Michael Rosholm, Nina Smith and Leif Husted. 2001. *Intergenerational Transmissions and the School-to-Work Transition of 2<sup>nd</sup> Generation Immigrants*. IZA Discussion Paper Series, no. 296 (Bonn, Germany).
- Organisation for Economic Co-operation and Development (OECD). 2007. *Education at a Glance 2007: OECD Indicators*. Paris. OECD. 456 p.
- Österberg, Torun. 2000. *Economic Perspectives on Immigrants and Intergenerational Transmissions*. Ekonomiska Studier 102, Göteborg University, Sweden.
- Picot, Garnett and Feng Hou. 2003. *The Rise in Low-income Rates Among Immigrants in Canada*. Statistics Canada Catalogue no. 11F0019MIE – No. 198. Ottawa. Analytical Studies Branch Research Paper Series, no. 198, 58 p. <http://www.statcan.ca/english/research/11F0019MIE/11F0019MIE2003198.pdf> (accessed September 20, 2007).

Picot, Garnett, Feng Hou and Simon Coulombe. 2007. *Chronic Low Income and Low-income Dynamics Among Recent Immigrants*. Statistics Canada Catalogue no. 11F0019MIE – No. 294. Ottawa. Analytical Studies Branch Research Paper Series, no. 294, 48 p. <http://www.statcan.ca/english/research/11F0019MIE/11F0019MIE2007294.htm> (accessed September 20, 2007).

Reitz, Jeffrey G. and Rupa Banerjee. 2007. "Belonging? Diversity, Recognition and Shared Citizenship in Canada." *Racial Inequality, Social Cohesion and Policy Issues in Canada*. Keith Banting, Thomas J. Courchene and F. Leslie Seidle (eds.). Montreal. Institute for Research in Public Policy. 57 p.

Van Ours, Jan and Justus Veenman. 2002. *From Parent to Child; Early Labor Market Experiences of Second-Generation Immigrants in the Netherlands*. IZA Discussion Paper Series, no. 649 (Bonn, Germany).

Van Ours, Jan and Justus Veenman. 2003. "The Educational Attainment of Second-Generation Immigrants in the Netherlands." *Journal of Population Economics*. No. 16, p. 739-753.

Zhou, Min. 1997. "Growing Up American: The Challenge Confronting Immigrant Children and Children of Immigrants." *Annual Review of Sociology*. No. 23, p. 63-95.



### Another Statistics Canada innovation...

Readers may also be interested in: EnviroStats (Catalogue no. 16-002-XIE/XWE)

EnviroStats is Statistics Canada's quarterly bulletin of environmental and sustainable development statistics.

EnviroStats provides regular statistical analysis of environmental topics written for a broad audience. At the core of each issue is a feature article. Shorter articles highlight new statistical developments or introduce new concepts. "Updates" cover recent and upcoming events such as releases of new statistical products and overviews of surveys which are under way. An extensive data table ensures that readers have the most recent statistics available. Each issue will also feature a map illustrating and analyzing a current topic. Statistics Canada <http://www.statcan.ca/bsolc/english/bsolc?catno=16-002-X>.



# Pensions and retirement savings of families

René Morissette and Yuri Ostrovsky

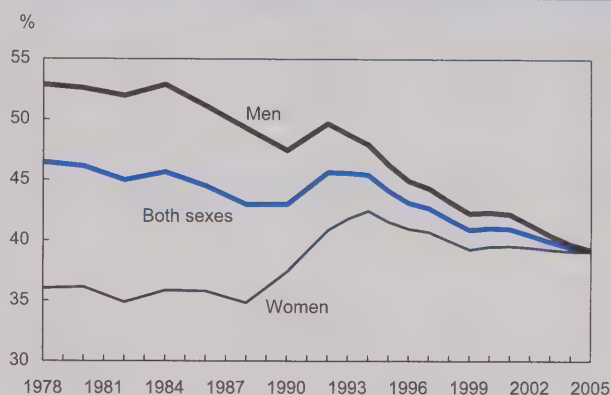
**A**re Canadian families better prepared for retirement today than in the past? Since the late 1970s, the proportion of employees covered by a registered pension plan (RPP) has dropped (Chart A)—the decline in coverage by defined-benefit RPPs more than offsetting growth in coverage by defined-contribution plans. Over the 1978 to 2005 period, male employees saw their RPP coverage decrease by almost 15 percentage points while female employees enjoyed little growth in coverage. However, the stagnation for women masks two opposing trends. Between the mid-1980s and the mid-1990s, RPP coverage fell slightly among women aged 25 to 34 but rose among those aged 35 to 54 (Morissette and Drolet 2001).

However, the individual-level data cannot be used to assess whether families are better prepared for retirement now than in the past. That depends, among other things, on changes in the degree to which men and women with high earnings and good RPP coverage marry each other. For instance, the share of couples with at least one RPP might not have fallen over the last two decades if some men who experienced a drop in RPP coverage married women who experienced the opposite.

This notion is more than a remote possibility. Decades ago, women married to high-income men typically did not work outside the home, while those married to lower-income men often did so to alleviate very tight family budgets.

In the 1970s, women married to higher income men increasingly began to enter the labour market. Since most of them were highly educated and since highly educated workers generally have relatively good pen-

**Chart A Pension coverage of men and women has converged**



Source: Statistics Canada, Pension Plans in Canada

sion coverage, the entry of these women into the labour market may have increased RPP coverage among wives of high-income males. This in turn may have partly offset the decline in pension coverage experienced by some higher-income men.

While changes in women's labour market participation may have affected the degree to which families prepare for retirement, changes in the distribution of family earnings likely played an important role as well. Since the early 1980s, family earnings inequality rose in Canada, as families at the top of the earnings distribution enjoyed much greater increases in employment income than those at the bottom (Frenette, Green and Picot 2006). In the absence of behavioural changes in savings rates, these changes in the distribution of family employment income likely changed the distribution of retirement savings.

This paper documents the evolution of pension coverage and retirement savings of families between 1986 and 2004 (see *Data sources and definitions*).

*The authors are with the Business and Labour Market Analysis Division. René Morissette can be reached at 613-951-3608 or [rene.morissette@statcan.ca](mailto:rene.morissette@statcan.ca). Yuri Ostrovsky can be reached at 613-951-4299 or [yuri.ostrovsky@statcan.ca](mailto:yuri.ostrovsky@statcan.ca).*

**Table 1 Pension coverage of men and women**

	Employees with an RPP <sup>1</sup>				Taxfilers contributing to an RPP <sup>2</sup>			
	Men		Women		Men		Women	
	25 to 34	35 to 54	25 to 34	35 to 54	25 to 34	35 to 54	25 to 34	35 to 54
	%							
1984	54.2	69.3	46.7	45.7	..	..	..	..
1986	49.8	66.8	43.4	46.9	27.7	41.5	28.4	33.4
1987	48.6	67.1	41.9	46.5	27.1	40.7	28.1	33.8
1988	49.2	67.0	42.9	49.8	27.0	40.6	28.6	35.5
1989	50.2	68.0	43.7	50.1	26.2	39.9	28.2	36.1
1990	48.5	67.6	43.8	50.2	26.0	39.7	28.6	36.8
1991	..	..	..	..	25.5	39.2	28.7	37.6
1992	..	..	..	..	25.3	39.1	29.3	38.6
1993	46.6	68.2	46.3	52.3	24.8	39.1	29.0	39.0
1994	47.0	70.2	46.0	55.0	23.6	38.2	28.2	39.0
1995	42.6	67.6	40.9	52.9	22.7	37.5	27.4	38.9
1996	43.1	63.8	41.2	52.2	21.7	36.7	26.3	38.6
1997	42.0	63.0	41.0	51.9	21.1	35.9	25.2	37.6
1998	40.5	60.8	39.7	51.7	20.7	34.8	25.0	36.8
1999	43.2	64.1	42.0	53.1	19.7	33.0	24.7	35.8
2000	48.2	63.6	45.6	55.7	19.5	32.1	25.2	35.7
2001	48.2	62.8	44.8	55.6	19.5	31.5	25.4	35.6
2002	45.0	58.2	44.0	50.8	19.9	31.3	26.2	35.9
2003	45.1	60.3	45.5	54.9	21.1	32.8	28.3	38.1
2004	45.4	59.1	42.4	54.8	21.4	32.8	28.8	38.3

1 Main job held by paid workers in May (LMAS and SLID) or December (SUM).

2 Taxfilers with annual wages and salaries of at least \$1,000 (1994 dollars).

Sources: Statistics Canada, Survey of Union Membership, 1984; Labour Market Activity Survey, 1986 to 1990; Survey of Labour and Income Dynamics, 1993 to 2004; Longitudinal Administrative Databank, 1986 to 2004

## Declining RPP coverage for men

### *Trends since the mid-1980s*

Over the 1984 to 2004 period, LMAS and SLID indicate that, between 1986 and 1997, the percentage of employees covered by an RPP fell significantly among young men (aged 25 to 34) and prime-aged men (35 to 54), dropped slightly among young women and rose among prime-aged women (Table 1). Similar qualitative patterns are found with LAD, based on the percentage of tax filers contributing to an RPP.<sup>3</sup>

Both SLID and LAD suggest that pension coverage of prime-aged men fell and that pension coverage of young women rose between 1997 and 2004. However, SLID paints a more optimistic picture for young men and prime-aged women. It suggests that RPP coverage rose slightly for these two groups, while LAD indicates it remained virtually unchanged.

The divergence appears to arise because the SLID question used to measure pension coverage was more inclusive in 2000 than in 1998. This would explain why

pension coverage of women aged 35 to 54 rose fully 4 percentage points between 1998 and 2000 (using SLID) while the percentage of female tax filers contributing to an RPP fell by one percentage point (using LAD). Changes in SLID question wording appear to have generated other spurious changes in pension coverage. Among prime-aged men and women, pension coverage fell by roughly 5 percentage points between 2001 and 2002 and then rose between 2002 and 2003. In contrast, LAD indicates a fairly stable percentage between 2001 and 2003 (Table 2). The combined results suggest that analyzing trends in RPP coverage with SLID is problematic after 1998. The remainder of this paper relies on LAD or PPIC to make inferences on RPP coverage for the 1998 to 2004 period.

Nevertheless, it is clear that, between 1986 and 2004, RPP coverage fell for young men and prime-aged men, changed little for young women (falling between 1986 and 1997 and then rising between 1997 and 2004), and rose for prime-aged women.



**Table 2 Taxfilers<sup>1</sup> with a positive pension adjustment**

	Men		Women	
	25 to 34	35 to 54	25 to 34	35 to 54
	%			
1991	37.8	54.7	35.5	43.8
1996	32.9	51.5	33.4	46.0
2001	32.7	47.9	34.4	45.7
2002	32.3	46.6	34.6	45.2
2003	33.0	47.0	36.1	46.3
2004	32.7	46.3	36.2	46.2

1 Annual earnings of at least \$1,000 (1994 dollars).

Source: Statistics Canada, Longitudinal Administrative Databank

Regardless of the measure used, the proportion of men with an RPP fell for the married and unmarried (Table 3). For instance, 34% of married men aged 35 to 54 contributed to an RPP in 2004, compared with 43% in 1986. In contrast, RPP coverage dropped slightly among unmarried women but rose substantially among the married. In 2004, 38% of married women aged 35 to 54 contributed to an RPP, up from 31% in 1986. As a result, the mid-1980s gap in pension coverage

between the two (with unmarried women being covered by a pension plan much more often than married women in 1986) had completely disappeared by 2004.

The growth in the incidence of RPPs among prime-aged married women likely reflects both increased labour force participation and their RPP coverage. It suggests that focusing solely on the decline in the proportion of husbands with an RPP may lead one to overestimate the decline in the percentage of couples with at least one RPP.

### **Cross-cohort convergence for women**

One important issue is whether the drop in RPP coverage of young men led to a downward shift in their age-coverage profile. In other words, has the decline in their RPP coverage upon entering the labour force been fully offset by relatively fast growth in coverage in subsequent years?

To investigate this question, four cohorts of young men and women, from 1986, 1990, 1996 and 2000 were examined to see what percentage contributed to an RPP between 1986 and 2004 (cohort aged 25 to 29 in 1986), 1990 and 2004 (the 1990 cohort), 1996 and 2004 (the 1996 cohort), and 2000 and 2004 (the 2000 cohort).

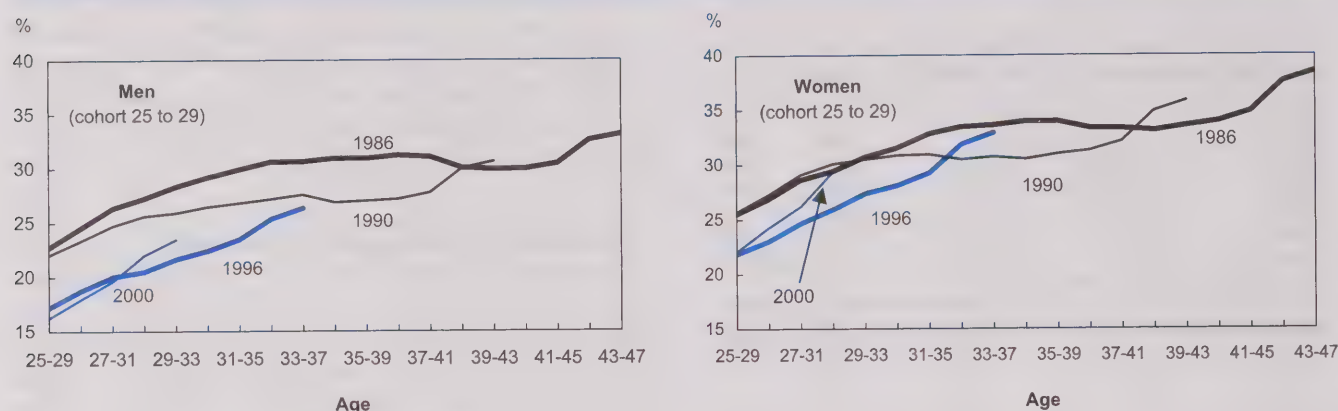
**Table 3 Taxfilers<sup>1</sup> with an RPP, by age, sex and marital status**

	Men				Women			
	25 to 34		35 to 54		25 to 34		35 to 54	
	Unmarried	Married <sup>2</sup>	Unmarried	Married <sup>2</sup>	Unmarried	Married <sup>2</sup>	Unmarried	Married <sup>2</sup>
	%							
<b>Contributing to RPP</b>								
1986	21.5	31.4	35.9	42.8	29.0	28.0	41.5	30.7
1991	20.8	28.7	33.9	40.5	28.0	29.1	42.4	36.0
1996	16.9	25.0	31.8	37.9	23.0	28.0	41.2	37.7
2001	16.3	21.9	27.9	32.5	23.0	26.9	36.4	35.3
2004	17.9	24.0	29.3	33.9	25.8	30.7	38.4	38.3
<b>With positive pension adjustment</b>								
1991	30.7	42.6	46.6	56.6	34.4	36.1	49.2	42.0
1996	26.2	37.4	44.4	53.3	29.7	35.3	48.7	45.0
2001	27.9	36.2	42.2	49.6	31.6	36.1	46.4	45.4
2004	28.0	36.2	41.4	47.7	32.7	38.3	46.5	46.1

1 Annual earnings of at least \$1,000 (1994 dollars)

2 Includes common-law relationships

Source: Statistics Canada, Longitudinal Administrative Databank

**Chart B Pension coverage has declined for all new labour force entrants, and for men the gap persists**

Source: Statistics Canada, Longitudinal Administrative Databank

The 1996 cohort of young men entered the labour market with a 5 percentage-point lower RPP coverage than the 1986 cohort (Chart B). Eight years later, a gap of about 4 percentage points was still observed. Thus, the decline in RPP coverage experienced by the 1996 cohort of young men at entry (compared with the 1986 cohort) was not fully offset by relatively fast growth in coverage in subsequent years. A different story emerges for young women. While fewer members of the 1996 cohort contributed to an RPP when they entered the labour market (compared with the 1986 cohort), the incidence of RPP contributions almost fully converged during the subsequent eight years. (Part of the convergence observed in the last few years may have reflected the fairly rapid growth in coverage observed for all cohorts between 2002 and 2004.)

### Why did RPP coverage fall?

Analysts have put forward a number of explanations to account for the decline in RPP coverage over the last two decades. First, increases in competition—from abroad or within industries—may have induced existing firms to cut labour costs by terminating some pension plans. New firms entering a market may also have avoided offering plans to maximize their chances of survival during their first few years of operation. Second, increases in employers' contributions to CPP/

QPP may have played a role (Frenken 1996). Third, any increase in administrative costs (like an increase in hourly fees for actuarial services in defined-benefit plans) may have reduced the incentive to provide RPPs and led firms either to move to group RRSPs or to offer no retirement plans at all. Fourth, legislative changes introduced during the 1980s and early 1990s regarding vesting, locking in and cost sharing may have increased the costs of providing pension plans. (Many pension experts also cite court decisions that forced sponsors to share fund surpluses with beneficiaries.) Fifth, holding employees' rates of contributions and rates of return in financial markets constant, increases in workers' life expectancy made defined-benefit plans more costly for employers. Sixth, in recent years, low long-term interest rates have also increased the costs of offering defined-benefit RPPs. Seventh, it has sometimes been argued that employers have responded to the (assumed) greater 'tastes for mobility' of today's workers by offering alternative non-wage benefits, like group RRSPs, rather than conventional defined-benefit RPPs.

Two additional explanations are possible for RPP coverage decline since the mid-1980s. Employment moved towards low-coverage industries, and unionized jobs (many of which offer RPPs) became relatively less important as Canada's unionization rate fell (Morissette and Drolet 2001). Using the 1986 LMAS



## Data sources and definitions

Pension Plans in Canada (PPIC) data come from the federal and provincial pension supervisory authorities. All pension plans registered with these authorities are included in the database. While PPIC provides a wealth of information on each pension plan (for example, employee contribution formula, benefit formula, and indexing of defined benefits and defined contribution benefits), as well as on the sex and province of residence of RPP members, it lacks information on important worker and job characteristics such as age, education, occupation, union status and firm size. As a result, it cannot be used to calculate coverage rates for workers of, say, different ages.

The Survey of Union Membership of 1984 (SUM), the Labour Market Activity Surveys of 1986-1990 (LMAS), and the Survey of Labour and Income Dynamics of 1993-2004 (SLID) combine information on RPP coverage, worker attributes and job characteristics.

One limitation of these household surveys is that the questions used to measure pension coverage change somewhat over time, thereby making inferences about the evolution of RPP coverage difficult for some groups, especially after 1998.

The Longitudinal Administrative Databank (LAD) of Statistics Canada overcomes this limitation. It provides two consistent measures of RPP coverage throughout the 1986 to 2004 period. Along with the household surveys, LAD can provide pension coverage for different age-sex categories. However, because it is based on tax records, it cannot be used to analyze RPP coverage by education, occupation, union status or industry.

All these data sets can be used to document trends in RPP coverage at the individual level. However, PPIC, SUM and LMAS do not contain family identifiers, so they cannot be used to document trends at the family level. With its large sample size, LAD allows an examination of the evolution of pension coverage of couples, lone-parents and unattached individuals over the 1986 to 2004 period.

Between 1984 and 1998, SUM, LMAS and SLID measured pension plan coverage by asking employees:

"Are you covered by a pension plan connected with this job (do not count, CPP/QPP, deferred profit-sharing plans or personal savings plans for retirement)?"

In 1999, 2000 and 2001, the question in SLID was changed to:

"In your job with this employer, did you have an employer pension plan?"

Additional questions were asked to assess whether respondents contributed to their pension plans, participated in a group RRSP or had their employer contribute to their group RRSP.

In 2002, the SLID question was changed once more:

"In your job with this employer, did you have an employer pension plan *not* including a group RRSP?"

The additional questions regarding employees' contributions to their pension plans, participation in a group RRSP and employers' contributions to a group RRSP remained intact. Then, in 2003 and 2004, SLID went back to the wording used from 1999 to 2001. The questions regarding employees' contributions to their pension plans and employers' contributions to a group RRSP remained unchanged while the question regarding employees' participation in a group RRSP was modified.

These changes in wording may have affected the trends in pension coverage that one can derive from SLID. Because the third version explicitly excludes group RRSPs while the second does not do so, some respondents interviewed in 1999 to 2001 or 2003 to 2004 may have reported their participation in a group RRSP. If so, pension coverage, as measured in SLID, should artificially drop between 2001 and 2002 and then increase between 2002 and 2003. Indeed, this spurious U-shaped pattern is observed for men and women aged 35 to 54.

LAD provides the percentage of tax filers participating in a contributory RPP and the percentage of tax filers with a positive pension adjustment and thus, most likely an RPP.<sup>1</sup> The first measure, which covers roughly three-quarters of all RPP members, is available back to 1986. The second is available only back to 1991. These two measures allow a comparison of trends in pension coverage at the individual level with those derived from LMAS and SLID.

LAD contains information on individuals' contributions to both RPPs and to registered retirement savings plan (RRSPs).<sup>2</sup> Using these two variables, it is possible to assess whether retirement savings of individuals and families have grown since the mid-1980s. Since these two variables do not reflect employers' contributions to RPPs, they provide only a partial assessment of Canadians' preparedness for retirement. Employer contributions to RPPs are captured through the pension adjustment variable.

and 1997 SLID and performing Oaxaca-Blinder decompositions on age/sex-specific models show that these two factors can account for at least three-quarters of the decline in RPP coverage for men and young women between 1986 and 1997. More precisely, the decline in unionization can account for at least 40% of the decline in RPP coverage for these groups.

To provide additional evidence on the importance of inter-industry employment shifts and de-unionization in RPP coverage decline, microdata from the 1986 LMAS and 1997 SLID can be pooled to estimate individual-level regressions (where controls for industry or union status are added to a constant term and a binary indicator that equals 1 for 1997 data, 0 other-

wise) (Table 4). Models with no controls (including only a constant term and the aforementioned binary indicator) indicate that RPP coverage of men aged 25 to 54 fell by 5.3 percentage points during the 1986 to 1997 period. Adding a control for (2-digit) industry reduces this decline to 2.2 points while adding a control variable for union status reduces it even more to 1.5 percentage points. When both controls are added, the decline almost vanishes, suggesting—as did Morissette and Drolet 2001—that employment shifts toward low-coverage industries and de-unionization accounted for a large share of the drop in men's RPP coverage.<sup>4</sup> Similar qualitative conclusions hold when findings for men and women are combined.

Arguably, the decline in unionization occurred in conjunction with several potential confounders: increases in competition between firms, increases in workers' life expectancy, increases in employers' contributions to CPP/QPP and legislative changes. Since the individual-level regressions do not control for these potential confounders, they might overestimate the impact of de-unionization. One extreme view is that de-unionization might simply be a proxy for unmeasured factors that reduced RPP coverage uniformly in all industries. While increases in competition between firms might have differed across industries, it is reasonable to assume that increases in workers' life expectancy, increases in employers' contributions to CPP/QPP and legislative changes tended to affect RPP coverage to the same degree in all industries.

Under this assumption, the hypothesis that de-unionization is simply a proxy for unmeasured factors that

reduced RPP coverage uniformly in all industries can be tested using the following equation:

$$(1) Y_{jt} = a_j + \beta U_{jt} + \alpha_t + \epsilon_{jt}$$

where  $a_j$  is an industry-specific fixed effect,  $Y_{jt}$  and  $U_{jt}$  denote the percentage of workers covered by an RPP and the percentage of unionized workers in industry  $j$  in year  $t$ , respectively, and  $\epsilon_{jt}$  is an error term. The term  $\alpha_t$  captures the influence of unmeasured factors that influence RPP coverage in an undifferentiated manner in all industries. First-differencing the equation leads to the following model:

$$(2) \Delta Y_j = \beta \Delta U_j + \alpha' + \Delta \epsilon_j$$

where changes in industry-level RPP coverage over the 1986 to 1997 period,  $\Delta Y_j$ , are related to changes in the unionization rate in various industries,  $\Delta U_j$ , and where  $\alpha' \equiv \alpha'_{11}$ . If de-unionization is simply a proxy for unmeasured factors that reduced RPP coverage uniformly in all industries, then  $\beta$  should equal zero when estimating equation (2).

Conversely, if de-unionization reduced RPP coverage, industries that experienced declines in unionization should also have experienced declines in RPP coverage. Under this second scenario,  $\beta$  would be positive.

The numbers strongly support the notion that de-unionization tended to reduce RPP coverage. Which-ever samples are used, equation (2)  $\beta$ s range between 0.39 and 0.75, suggesting that industries that experienced an extra 10 percentage-point decline in unionization also experienced at least an extra 4-point decline in RPP coverage. Furthermore, these estimates of the impact of de-unionization are very similar to those from individual-level regressions—between 0.35 and 0.51. Therefore, unless industries that experienced sharp declines in unionization also experienced strong increases in competition, the numbers suggest that de-unionization had a sizeable impact on workers' RPP coverage during the 1986 to 1997 period.

**Table 4 Unionization and RPP coverage, 1986 to 1997**

	Both sexes	Men	Women
	% point		
<b>Individual-level regressions<sup>1</sup></b>			
No controls	-2.5	-5.3	1.3
Industry	0.0	-2.2	2.9
Union status	0.3	-1.5	2.7
$\beta$ value	(0.48)	(0.44)	(0.51)
Industry and union status	1.5	-0.1	3.4
$\beta$ value	(0.39)	(0.35)	(0.42)
<b>Industry-level regressions<sup>2</sup></b>			
Weighted, $\beta$ value	(0.56)	(0.39)	(0.75)
Unweighted, $\beta$ value	(0.45)	(0.60)	(0.56)

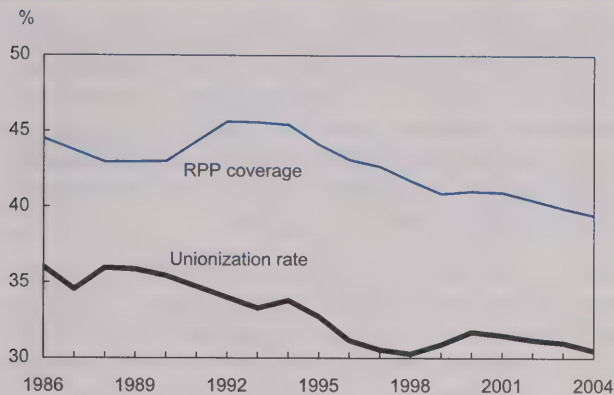
1 Paid workers aged 25 to 54 and employed in their main job in December 1986 or December 1997.

2 The dependent variable is the change in the percentage of workers covered by an RPP in a given industry over the 1986 to 1997 period.

Note: In both regressions, the union status variable is statistically significant at the 5% level (two-tailed test).

Sources: Statistics Canada, Labour Market Activity Survey, 1986; Survey of Labour and Income Dynamics, 1997; authors' calculations



**Chart C The influence of unionization on RPP coverage has waned**

Sources: Statistics Canada, Pension Plan in Canada; Labour Market Activity Survey, 1986 to 1990; Survey of Labour and Income Dynamics, 1993 to 2004

The influence of unionization on RPP coverage is likely to have waned after 1997, since RPP coverage kept falling, even though the unionization rate changed very little between 1998 and 2004 (Chart C). In contrast, employment shifts toward low-coverage industries appear to have persisted. This can be seen by applying the 2004 distribution of employment by industry (4-digit NAICS codes) to the 1997 vector of industry-specific values of RPP coverage (obtained from SLID 1997): RPP coverage in the aggregate drops by roughly 1.5 percentage points from 1997 values.<sup>5</sup> Since PPIC

data suggest that RPP coverage fell by about 3 percentage points between 1998 and 2005 (Table 5), inter-industry employment shifts seem to have been an important contributor both during the 1986 to 1997 period and subsequently.

Why did RPP coverage fall since the mid-1980s? This was likely in response to a wide variety of factors. Since the impact of some factors—for example, growing competition between firms and increases in workers' life expectancy—is difficult to quantify, a complete decomposition of the sources is virtually impossible. Nevertheless, evidence strongly suggests that both de-unionization and employment shifts toward low-coverage sectors played important roles. And, while the decline in RPP coverage since the mid-1980s likely reflects a wide variety of factors, the influence of some—such as, unionization and low long-term interest rates—has clearly changed over time.

### Modest decline in family RPP coverage

The proportion of families with at least one RPP depends on the proportion of RPP holders among men and women of working age as well as the degree to which those with an RPP marry each other. The proportion of RPP holders in year  $t$  is given by the equation:

$$(3) \text{RPP}_t / \text{POP}_t = [\text{RPP}_t / L_t] * [L_t / \text{LF}_t] * [\text{LF}_t / \text{POP}_t]$$

where  $\text{RPP}_t$ ,  $L_t$ ,  $\text{LF}_t$  and  $\text{POP}_t$  all refer to individuals aged 15 and over and denote the number of RPP members, the number of employees (including incorporated self-employed individuals), the labour force and the working-age population, respectively.<sup>6</sup> Clearly,

**Table 5 Individuals with an RPP<sup>1</sup>**

	Men				Women			
	RPP/L	L/LF	LF/POP	RPP/POP	RPP/L	L/LF	LF/POP	RPP/POP
	%							
1978	52.9	83.0	77.6	34.1	36.0	83.5	46.5	14.0
1984	52.9	77.9	76.9	31.6	35.8	81.2	53.0	15.4
1988	49.3	81.6	76.8	30.9	34.8	83.6	56.5	16.4
1994	47.9	77.4	73.3	27.2	42.4	81.3	57.7	19.9
1998	43.2	79.4	72.2	24.8	39.9	81.8	57.8	18.9
2003	40.4	81.9	73.0	24.2	39.2	85.0	60.9	20.3
2005	39.2	82.5	73.2	23.7	39.1	85.7	62.0	20.8

1 Individuals 15 and over.

Sources: Statistics Canada, Labour Force Survey; Pension Plans in Canada

the proportion of RPP holders among individuals of working age depends on three factors: the RPP coverage of employees [ $RPP_t/L_t$ ], the proportion of employees among labour market participants [ $L_t/LF_t$ ], and the participation rate [ $LF_t/POP_t$ ]. Thus, a decline in pension coverage of employees does not necessarily lead to a decrease in the proportion of individuals with an RPP. For instance, the proportion of women with an RPP could increase over time if increases in women's participation rates more than offset any decrease in their pension coverage.

The decline in men's RPP coverage between 1978 and 2005, combined with a slight decrease in their participation rates, led to a 10 percentage-point decline in the proportion of men with an RPP. In contrast, the percentage of women with an RPP rose, the result of a strong increase in labour market involvement and a slight increase in RPP coverage. In 2005, 21% of women of working age had an RPP, compared with only 14% in 1978. The growing incidence of RPPs among women almost fully offset the decline in the proportion of men with an RPP. As a result, the overall percentage of those with an RPP changed very little, from 24% in 1978 to 22% in 2005. Dividing RPP<sub>t</sub> by the number of individuals aged 15 to 64 yields corresponding estimates of 27% and 26% for 1978 and

2005, respectively (data not shown). Taken together, these numbers suggest that the percentage of couples with at least one RPP may not have changed much over the last two decades.

About one half of young couples and almost two-thirds of prime-aged couples had at least one RPP in 2004 (Table 6). More importantly, couples did not experience a massive decline in pension coverage over the last two decades. While the percentage of couples with at least one RPP did fall, the drop was moderate—only 3 to 5 percentage points.

This was the case because the growth in the proportion of wives with an RPP helped mitigate a substantial decline in the proportion of husbands with an RPP. For instance, RPP membership among husbands aged 35 to 54 fell substantially, from 56.7% in 1991 to 47.7% in 2004. In contrast, participation in an RPP rose by over 5 percentage points among their wives. Part of the increase benefited couples in which both partners had an RPP (0.8 percentage point). The net result was that the proportion of prime-aged couples with at least one RPP fell less than 5 percentage points (from 66.5% to 61.9%), about half the 9-point decline for prime-aged husbands with an RPP. The growing proportion of wives with an RPP also constrained the decline in RPP coverage among young couples.<sup>7</sup>

**Table 6 Couples<sup>1</sup> with RPPs**

	Husband <sup>2</sup> 25 to 34				Husband <sup>2</sup> 35 to 54			
	None	Husband only	Wife only	Both	None	Husband only	Wife only	Both
	%							
<b>Contributing to RPP</b>								
1986	57.9	23.2	10.7	8.2	48.5	31.6	8.6	11.3
1991	58.8	19.9	12.5	8.9	47.9	26.4	11.5	14.2
1996	62.7	17.1	12.3	7.8	49.5	23.9	12.7	13.9
2001	64.6	14.7	13.1	7.5	53.5	20.0	14.0	12.5
2004	60.9	14.9	14.8	9.4	51.0	19.7	15.1	14.2
<b>Positive pension adjustment</b>								
1991	45.0	28.5	12.3	14.2	33.5	36.2	9.8	20.5
1996	49.7	24.6	12.9	12.8	35.5	32.4	11.4	20.7
2001	49.3	22.7	14.1	13.9	37.2	28.4	13.2	21.2
2004	48.4	21.4	15.3	14.9	38.1	26.4	14.2	21.3

1 Includes common-law relationships.

2 Husband has annual wages and salaries of at least \$1,000 (1994 dollars).

Source: Statistics Canada, Longitudinal Administrative Databank



**Table 7 Prime-aged couples with RPP, by earnings<sup>1</sup>**

	1991	1996	2001	2004
<b>With positive pension adjustment</b>				
				%
<b>Bottom 20%</b>				
None	73.1	76.2	75.3	75.6
Husband	20.4	17.1	16.7	15.4
Wife	5.1	5.3	6.2	7.1
Both	1.4	1.3	1.8	1.9
<b>Middle 20%</b>				
None	23.3	24.3	26.6	27.9
Husband	49.1	45.0	37.7	34.7
Wife	11.7	14.0	16.0	17.3
Both	15.9	16.7	19.7	20.1
<b>Top 20%</b>				
None	16.7	18.2	21.9	22.4
Husband	26.1	23.7	22.2	21.1
Wife	10.0	11.9	14.4	15.3
Both	47.1	46.2	41.4	41.2

1 Husband has annual earnings of at least \$1,000 (1994 dollars) and aged 35 to 54.

Source: Statistics Canada, Longitudinal Administrative Databank

While the proportion of couples with at least one RPP fell slightly, the fraction where both partners hold an RPP changed very little. Both in 1991 and 2004, about 15% of young couples and one-fifth of prime-aged couples held two RPPs.<sup>8</sup>

### Trends similar across earnings levels

These averages potentially mask significant differences across segments of the earnings distribution. High-income couples have—as expected—much better RPP coverage than their lower-paid counterparts (Table 7). Throughout the 1991 to 2004 period, roughly 80% of prime-aged couples in the top fifth of the earnings distribution had at least one RPP and at least 40% of them had two RPPs. In contrast, only one-quarter of their counterparts in the bottom fifth had at least one RPP and very few (2% at most) held two RPPs. Did the percentage of couples with at least one RPP fall more among couples at the lower end than among those in the upper end? No—between 1991 and 2004, the proportion of prime-aged couples with at least one RPP fell by roughly 3, 5 and 6 percentage points in the bottom, middle and top fifths, respectively.

Meanwhile, the proportion with two RPPs fell by 6 points at the top but rose by 4 points in the middle. Hence, participation in RPPs became more polarized among ‘middle-class’ couples, as they became more likely not only to have no RPPs but also to have two.

### Uneven growth in retirement savings

While pension coverage provides useful information on an important component of workers’ total compensation and of families’ retirement packages, it is silent on the extent to which Canadian families prepare themselves for retirement. One way to address this issue is to examine how contributions to tax-assisted retirement savings programs have evolved over time.<sup>9</sup>

On average, Canadian couples appear to be better prepared for retirement now than two decades ago: average retirement savings of couples grew during the 1986 to 2004 period. Combined, RPP and RRSP contributions grew from \$2,000 in 1986 to \$3,300 in 2004 among young couples (Table 8). Likewise, prime-aged couples saw their RPP and RRSP contributions rise from \$3,900 in 1986 to \$5,400 in 2004. For both young and prime-aged couples, most of the increase in total contributions came from an increase in husbands’ RRSP contributions. In both cases, husbands’ RPP contributions fell, on average. However, that drop was more than offset by husbands’ and wives’ growing RRSP contributions. Summing pension adjustments and RRSP contributions also implies that retirement savings of two-parent families grew over the 1991 to 2004 period. However, with this broader measure, more than half of the increase in retirement savings can be attributed to wives’ growing pension adjustments and RRSP contributions.

The increase in total contributions differed markedly across segments of the earnings distribution. Young and prime-aged couples in the top fifth of their earnings distributions enjoyed increases in combined RRSP and RPP contributions of \$3,500 and \$4,000, respectively, between 1986 and 2004 (Table 9).<sup>10</sup> Those in the middle fifth also experienced significant growth. In contrast, their counterparts at the bottom saw the sum of their RRSP and RPP contributions stagnate, although some increase was observed during the second half of the 1990s among prime-aged couples.<sup>11</sup> Similar qualitative conclusions can be drawn from the sum of pension adjustments and RRSP contributions.

**Table 8 Average RPP and RRSP contributions and pension adjustment of couples<sup>1</sup>**

	Husband 25 to 34				Husband 35 to 54			
	Husband		Wife		Husband		Wife	
	RPP/PA	RRSP	RPP/PA	RRSP	RPP/PA	RRSP	RPP/PA	RRSP
<b>RPP and RRSP contributions</b>	\$							
1986	600	800	300	300	1,200	1,700	400	600
1991	600	1,000	300	400	1,100	2,000	500	800
1996	500	2,000	300	900	1,000	3,300	500	1,400
2001	400	1,900	300	900	800	2,900	500	1,300
2004	500	1,600	400	800	1,000	2,600	600	1,200
<b>RRSP contributions and pension adjustment<sup>2</sup></b>								
1991	1,600	1,000	700	400	3,100	2,000	1,000	800
1996	1,400	2,000	700	900	2,900	3,300	1,100	1,400
2001	1,500	1,900	900	900	3,000	2,900	1,400	1,300
2004	1,600	1,600	1,000	800	3,000	2,600	1,500	1,200

1 Husband has annual earnings of at least \$1,000 (1994 dollars).

2 In 2002 dollars.

Source: Statistics Canada, Longitudinal Administrative Databank

**Table 9 Pension contributions of couples by earnings<sup>1</sup>**

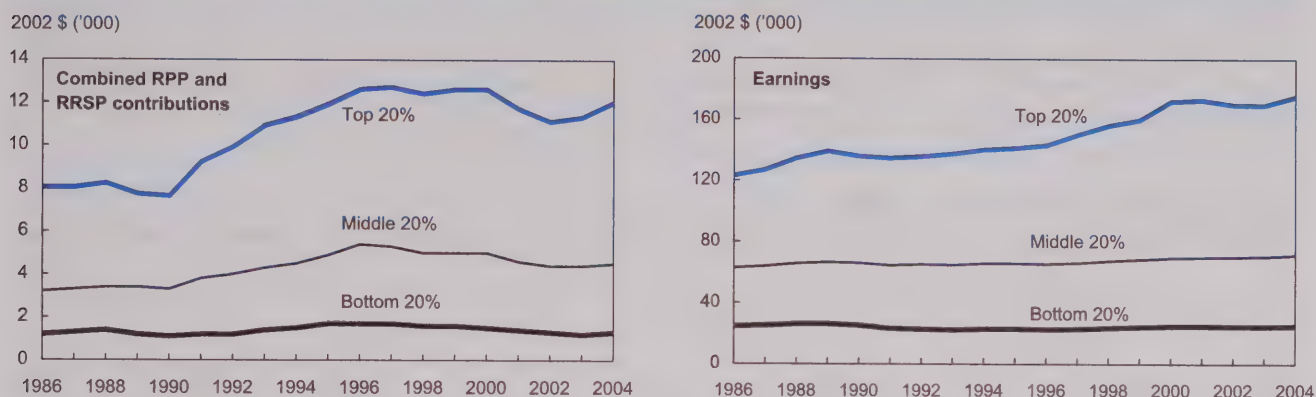
	Husband 25 to 34			Husband 35 to 54		
	Bottom 20%	Middle 20%	Top 20%	Bottom 20%	Middle 20%	Top 20%
<b>Combined RRSP and RPP</b>	\$					
1986	400	1,600	4,600	1,200	3,200	8,000
1991	400	1,800	5,400	1,200	3,800	9,200
1996	600	3,000	8,800	1,700	5,400	12,600
2001	500	2,600	8,600	1,400	4,600	11,700
2004	400	2,400	8,100	1,300	4,500	12,000
<b>Combined RRSP and pension adjustment</b>						
1991	500	3,000	8,900	1,500	6,000	14,600
1996	700	4,000	12,100	2,000	7,600	18,200
2001	600	3,900	12,600	1,800	7,400	18,100
2004	600	3,800	12,100	1,600	7,200	18,000

1 Husband has annual earnings of at least \$1,000 (1994 dollars).

Source: Statistics Canada, Longitudinal Administrative Databank

Hence the distribution of retirement savings became more unequal. In 1986, combined RRSP and RPP contributions made by couples at the top were at least \$4,200 (or at least 6.7 times) greater, on average, than those made by their counterparts at the bottom. By 2004, combined contributions by the former were at least \$7,700 (or at least 9.2 times) greater, on average, than those by the latter. Similar patterns are observed from 1991 to 2004 with the broader measure of retirement savings. Part of this increase in inequality in retirement savings is no doubt associated with the growth in family earnings inequality that took place between 1986 and 2004 (Chart D). Prime-aged couples in the top fifth saw their average earn-



**Chart D The increase in retirement savings inequality mirrored the increase in earnings inequality**

Source: Statistics Canada, Longitudinal Administrative Databank

ings rise from \$122,700 (in 2002 dollars) to \$175,100. In contrast, their counterparts at the bottom experienced virtually no growth in employment income (\$24,600 in 1986 and \$25,000 in 2004).<sup>12</sup>

Among prime-aged couples, retirement savings of women remain below those of men, reflecting in part their lower participation rates (Table 10). However, as a result of their growing labour market participation, retirement savings have generally increased more among women than men over the 1991 to 2004 period. For instance, among prime-aged couples in the top fifth, women's retirement savings rose by \$1,900. In the middle fifth, women's savings rose by \$900. In contrast, men's retirement savings increased by \$1,300 and \$300. As a result, wives' share of savings increased.

## Summary

Since the late 1970s, the proportion of employees covered by RPPs fell as employers moved away from defined-benefit plans to a greater extent than they increased the supply of defined-contribution RPPs. While increases in competition between firms, increases in workers' life expectancy, increases in employer contributions to CPP/QPP and EI, legislative changes in the 1980s, and low long-term interest rates in recent years may all have contributed, employment shifts toward low-coverage industries and de-unionization

**Table 10 Pension adjustment and RRSP contributions of husbands and wives, by earnings, prime-aged couples<sup>1</sup>**

	1991	1996	2001	2004
<b>Bottom 20%</b>				
Husband				
PA	400	300	400	400
RRSP	800	1,200	900	800
Wife				
PA	100	100	100	100
RRSP	200	400	400	300
<b>Middle 20%</b>				
Husband				
PA	3,000	2,900	2,900	2,900
RRSP	1,800	2,900	2,500	2,200
Wife				
PA	600	800	1,100	1,200
RRSP	600	1,000	1,000	900
<b>Top 20%</b>				
Husband				
PA	6,100	5,800	5,600	5,600
RRSP	3,800	6,200	5,900	5,600
Wife				
PA	2,900	3,000	3,400	3,700
RRSP	1,900	3,200	3,200	3,000

<sup>1</sup> Husband has annual earnings of at least \$1,000 (1994 dollars).  
Source: Statistics Canada, Longitudinal Administrative Databank

## Appendix

The following table replicates Table 5 but redefines RPP<sub>i</sub> as the number of RPP members in defined-benefit plans. The percentage of men with a defined-benefit RPP fell from 32% in 1978 to 19% in 2005, the percentage of women with a defined-benefit RPP

rose from 13% to 17% during that period, and the percentage of individuals with a defined-benefit RPP fell from 22% to 18%. Using the number of individuals aged 15 to 64 as a denominator, the percentage of individuals with a defined-benefit RPP falls from 25% to 21%.

### Individuals with a defined-benefit RPP<sup>1</sup>

	Men				Women			
	RPP/L	L/LF	LF/POP	RPP/POP	RPP/L	L/LF	LF/POP	RPP/POP
					%			
1978	48.9	83.0	77.6	31.5	34.5	83.5	46.5	13.4
1984	48.9	77.9	76.9	29.2	33.7	81.2	53.0	14.5
1988	44.9	81.6	76.8	28.1	32.0	83.6	56.5	15.1
1994	42.3	77.4	73.3	24.0	38.3	81.3	57.7	17.9
1998	36.5	79.4	72.2	20.9	35.1	81.8	57.8	16.6
2003	32.5	81.9	73.0	19.4	33.1	85.0	60.9	17.1
2005	30.9	82.5	73.2	18.7	32.7	85.7	62.0	17.4

1 Individuals aged 15 and over.

Sources: Statistics Canada, Labour Force Survey; Pension Plans in Canada

appear to have been key factors underlying the decline in RPP coverage between the mid-1980s and the late 1990s.

While sharp declines in RPP coverage of men and slight declines in their overall labour force participation caused a substantial decrease in the proportion holding RPPs, the substantial growth in women's labour force participation and, to a lesser extent, the slight increase in their aggregate coverage rate, almost fully offset these trends. The net result was that the overall percentage of RPP holders among individuals of working age changed very little between 1978 and 2005. In both years, roughly one quarter of Canadians aged 15 to 64 had an RPP.

Abstracting from potential substitution effects between men and women of different ages and skills, the growing labour market involvement of wives had a positive impact on families' RPP coverage. Specifically, because wives of prime-aged husbands increased both their labour force participation and their RPP coverage, the proportion of prime-aged couples with at least one RPP fell much less than the proportion of prime-aged husbands with RPPs. As a result, Canadian cou-

ples experienced only a moderate (rather than a substantial) decline in RPP coverage over the past two decades.

On average, Canadian families are better prepared for retirement today than their counterparts were in the past. However, this scenario does not apply universally. Two-parent families located in the bottom 20% of the earnings distribution are not better prepared for retirement now than in the past. However, those located in the top 20% appear better prepared. Canadian families' contributions toward retirement, which were fairly unequal in the mid-1980s, have become even more unequal over the last two decades. To a large extent, the growth in inequality in retirement savings seems to reflect the large increase in family earnings inequality over the last two decades. This increase in family earnings inequality is in turn driven by a widening dispersion of the permanent component of family earnings, rather than by factors that are transitory in nature (Morissette and Ostrovsky 2005).

Several caveats should be noted. First, this study has examined the evolution of retirement preparedness since the mid-1980s, not the degree to which current retirement savings are adequate to maintain living



standards once retirement age is reached. Second, preparedness for retirement was measured using two different rubrics—the first measure used the sum of contributions to registered pension plans (RPPs) and registered retirement savings plans (RRSPs); the second used the pension adjustment variable, thus implicitly adding employer RPP contributions. However, neither the move from defined-benefit RPPs to defined-contribution RPPs (and its implications in terms of economic security for Canadian workers) nor the increased longevity of seniors was taken into account. These two factors will clearly influence families' living standards after retirement.

Recent research has shown that the maturation of the Canada and Quebec Pension Plans led to a substantial reduction in income inequality among the elderly between the early 1980s and the mid-1990s (Myles 2000). Part of this reduction in inequality may be lost in coming years, since growing inequality in contributions toward retirement among families could, in the absence of offsetting factors, make the distribution of family income among seniors more unequal.

### Perspectives

#### ■ Notes

1 The pension adjustment is the sum of credits for the year, if any, from deferred profit-sharing plans or benefit provisions of RPPs. Membership in deferred profit-sharing plans is very small compared with membership in RPPs: in 1993, the former represented only 7% of the latter (Frenken 1995). As a result, changes in the percentage of tax filers with positive pension adjustment should reflect mainly changes in the percentage of tax filers who are members of RPPs.

2 Information on individuals' contributions to RRSPs is available back to 1982 while individuals' contributions to RPPs are available back to 1986.

3 The percentages shown with LAD are smaller than those shown with the LMAS and SLID for two reasons. First, the denominator used (the number of tax filers with annual earnings of at least \$1,000 in 1994 constant dollars, in LAD, versus the number of workers employed in May in their main job in the LMAS and SLID) is bigger in LAD than it is in the LMAS or SLID. Second, tax filers contributing to an RPP are only a subset of all RPP members.

4 Apart from industry and union status, Morissette and Drolet (2001) include controls for occupation, province, age and part-time status in their analysis.

5 Among employees for whom industries of employment are known (96% of the employees in the cross-sectional sample drawn from SLID 1997), aggregate RPP coverage in SLID drops from 46.3% to 44.7% with this standardization.

6 Ideally, one would like to define equation (3) for individuals aged 15 to 64. This is not possible since the Pension Plans in Canada database provides no information on age.

7 The percentage of young couples with at least one RPP fell by 3.4 percentage points between 1991 and 2004, less than the 6.4-point decline in the proportion of young married men with an RPP.

8 The percentage of prime-aged couples where both partners contribute to an RPP rose from 11% in 1986 to 14% in 2004.

9 RRSP contributions include contributions to group RRSPs in addition to individual RRSPs. Tax data do not distinguish the former from the latter.

10 The growth in husbands' RRSP contributions was the main factor underlying the increase in total contributions made by couples in the top fifth. The second most important factor was the growth in wives' RRSP contributions. For instance, among prime-aged couples, husbands' RRSP contributions increased by \$2,400 between 1986 and 2004 while wives' RRSP contributions grew \$1,500. In contrast, in the bottom fifth, husbands' RRSP contributions remained unchanged while wives' RRSP contributions grew a modest \$200.

11 One potential explanation for the stagnation of retirement savings of families in the lowest levels of the earnings distribution is that some may have few incentives to save for retirement, given the current structure of the transfer programs targeted for seniors (for more details see Shillington 1999). Alternatively, the stagnation of their family earnings may also have constrained their retirement savings (Chart D).

12 Retirement savings rates changed very little among families in the bottom or top fifths. Among families in the middle fifth, rates rose slightly, from 5.1% in 1986 to 6.3% in 2004.

#### ■ References

Frenette, Marc, David A. Green and Garnett Picot. 2006. "Rising Income Inequality in the 1990s: An exploration of Three Data Sources." *Dimensions of Inequality in Canada*. David A. Green and Jonathan R. Kesselman (eds.). Vancouver. University of British Columbia Press. Chapter 3.

Frenken, Hubert. 1996. "The Impact of Changes in the Canada Pension Plan on Private Pensions." *Canadian Business Economics*. Vol. 4, no. 4. Summer. p. 65-74.

Frenken, Hubert. 1995. "Tax Assistance for Pensions and RRSPs." *Perspectives on Labour and Income*. Vol. 7, No.4. Winter. Statistics Canada Catalogue no. 75-001-XPE. p. 9-13.

Morissette, René and Yuri Ostrovsky. 2005. "The Instability of Family Earnings and Family Income in Canada, 1986-1991 and 1996-2001." *Canadian Public Policy*. Vol. 31, no. 3, p. 273-302. "Statistics Canada Catalogue no. 11F0019MIE2005265. Ottawa. Analytical Studies Branch Research Paper Series, no. 265.

Morissette, René and Marie Drolet. 2001. "Pension Coverage and Retirement Savings of Young and Prime-Aged Workers in Canada, 1986-1997." *Canadian Journal of Economics*. Vol. 34, issue 1. p. 100-119. Statistics Canada Catalogue no. 75F0002MIE2000009. Ottawa. Income Research Paper Series, no. 9.

Myles, John. 2000. "The Maturation of Canada's Retirement Income System: Income Levels, Income Inequality and Low-Income Among the Elderly." Statistics Canada Catalogue no. 11F0019MPE – No. 147. Ottawa. Analytical Studies Branch Research Paper Series, no. 147, 21 p.

Shillington, Richard. 1999. "The Dark Side of Targeting: Retirement Saving for Low-Income Canadians." C.D. Howe Institute Commentary, no. 130. September. 16 p.

### *Are you moving?*

Please forward your name, old address, new address, telephone number and client reference number to: **Statistics Canada, Finance Division, R.H. Coats Bldg., 6th floor, 100 Tunney's Pasture Driveway, Ottawa, Ontario K1A 0T6**; or call 1 800 267-6677 (Canada and United States), fax 1 877 287-4369 (Canada and United States) or e-mail [infostats@statcan.ca](mailto:infostats@statcan.ca).

Please allow four weeks notice to ensure uninterrupted delivery.



# Depression at work

Heather Gilmour and Scott B. Patten

**W**orldwide, depression is the leading cause of chronic disability (Ustun, Yuso-Mateos, Chatterji et al. 2004). It can affect many aspects of life, including work. In fact, the impact of depression on job performance has been estimated to be greater than that of many other long-term ailments, such as arthritis, hypertension, back problems and diabetes (Kessler, Greenberg, Mickelson et al. 2001).

Although the various disabilities associated with depression may seriously impede an individual's ability to find and keep a new job,<sup>1</sup> many people who have recently had a major depressive episode (depression) are in the workforce. In 2002, the majority (71%) of 25- to 64-year-old Canadians who reported having experienced a major depressive episode in the previous 12 months were employed; however, symptoms associated with this condition may have hampered their ability to perform their jobs.

Indeed, depression among the employed has been linked with both absenteeism and diminished productivity (known as 'presenteeism'). In Canada, the cost of productivity losses in the form of short-term disability days due to depression was estimated at \$2.6 billion in 1998 (Stephens and Joubert 2001).<sup>2</sup>

This article is based on results from the 2002 Canadian Community Health Survey (CCHS), cycle 1.2: Mental Health and Well-being, and the 1994/1995 to 2002/2003 National Population Health Surveys (NPHS) (see *Data sources and methodology*). The prevalence of a major depressive episode among employed Canadians aged 25 to 64 is first studied according to selected job, health and sociodemographic characteristics (see *Definitions*). The impact of depression on work impairment is then assessed via associations with reduced work activities, mental health disability days and work absences, using multivariate logistic regression models.

In this study, work impairment covers both absenteeism (absent from work one or more days the previous week) and presenteeism (reduced work activities). A third measure of impairment (at least one mental health disability day in the previous two weeks) combines elements of both, in that it represents days spent mostly or entirely in bed (absenteeism), as well as days respondents had to cut down on activities or expend extra effort to perform them (see *Work impairment*).

## Almost half a million workers live with depression

An estimated 489,000 Canadians aged 25 to 64 who were employed at the time of their 2002 CCHS interview (3.7% of workers) had experienced a major depressive episode in the previous 12 months (Table 1). Moreover, an additional million workers (8% of the workforce) had experienced depression some time in their lives, although not in the past year (data not shown).

The occurrence of depression in the workforce was twice as prevalent among women as men (5.1% vs. 2.6%)<sup>3</sup> and was much more common among persons who were divorced, separated or widowed (7.5%)—as opposed to those married or in a common-law relationship (3.0%). Workers who lived in lower-income households were also more likely to suffer from depression than those living in higher-income households (4.7% vs. 3.4%). Persons with chronic health conditions lasting at least 6 months—such as arthritis, diabetes or cancer—were almost twice as likely as those without these ailments to have been depressed.<sup>4</sup> Differences by age and education were not significant.

Previous research has shown that work stress is linked to depression and other psychological disorders (Wang 2005 and Shields 2006). Data from the 2002 CCHS

Heather Gilmour is with the Health Information and Research Division. She can be reached at 613-951-2114 or Heather.Gilmour@statcan.ca. Dr. Scott B. Patten is with the Departments of Community Health Sciences and Psychiatry at the University of Calgary. He can be reached at 403-220-8752 or patten@ucalgary.ca.

support this finding. Indeed, workers who reported high levels of work stress were more likely to have reported depression in the last 12 months than workers who had lower levels of work stress (6.0% vs. 2.5%). In addition, workers reporting anxiety disorders in the past 12 months, or alcohol or drug dependency, were much more likely to have suffered a major depressive episode during that period than those who did not have these problems (20.0% vs. 2.9% for anxiety disorders).

Depression was also associated with several job-related characteristics, including occupation and shift work. Sales and service workers and those in white-collar jobs were more likely than blue-collar workers to have faced depression in 2002 (Table 1).<sup>5</sup> Regular evening and night shift workers were more likely to report a major depressive episode than those working a regular day schedule (5.6% vs. 3.5%).<sup>6</sup>

The prevalence of depression was relatively low among workers who spent more than 40 hours a week on the job (2.6%), compared with those who worked less than 30 hours (5.7%). This discrepancy may, in part, reflect the impact of mental health on hours worked—at the time of the survey, many recently or currently depressed individuals may not have been capable of working full-time.

### Depression interferes with work

CCHS respondents who reported a major depressive episode in the previous year were asked to what degree, on a scale of 1 to 10, the illness had interfered with various aspects of their lives during the period the symptoms had been

**Table 1 Prevalence of major depressive episode in previous 12 months among employed 25 to 64 year-olds**

	'000	%
<b>Total</b>	<b>489.0</b>	<b>3.7</b>
<b>Sex</b>		
Men (ref)	184.6	2.6
Women	304.3	5.1 *
<b>Age</b>		
25 to 44	317.2	4.1
45 to 64 (ref)	171.8	3.2
<b>Occupation</b>		
White-collar	264.6	3.9 *
Sales or service	107.9	4.6 *
Blue-collar (ref)	77.6	2.5
<b>Weekly work hours</b>		
1 to 29	90.5	5.7 *
30 to 40 (ref)	273.5	4.1
Over 40	124.3	2.6 *
<b>Work schedule</b>		
Regular day (ref)	331.7	3.5
Regular evening or night	48.1 <sup>E</sup>	5.6 <sup>E*</sup>
Irregular or rotating shift	109.2	4.0
<b>High self-perceived work stress</b>		
Yes	260.5	6.0 *
No (ref)	216.6	2.5
<b>Marital status</b>		
Married or common-law (ref)	292.7	3.0
Divorced, separated or widowed	98.8	7.5 *
Single (never married)	96.5	5.0 *
<b>Education</b>		
High school graduation or less (ref)	151.5	3.5
Some postsecondary	35.5 <sup>E</sup>	4.2 <sup>E</sup>
Postsecondary certificate, diploma or degree	296.4	3.8
<b>Household income</b>		
Lowest, lower-middle or middle	114.6	4.7 *
Upper-middle or highest (ref)	344.1	3.4
<b>Chronic condition</b>		
Yes	328.2	4.9 *
No (ref)	159.8	2.5
<b>Body Mass Index category</b>		
Underweight or normal (ref)	241.0	4.0
Overweight	162.3	3.5
Obese	77.5	3.4
<b>Anxiety disorder in past 12 months</b>		
Yes	108.3	20.0 *
No (ref)	357.4	2.9
<b>Anxiety disorder in lifetime, but not in past 12 months</b>		
Yes	46.4	5.0 *
No (ref)	311.0	2.7
<b>Alcohol or drug dependence in past 12 months</b>		
Yes	28.7 <sup>E</sup>	9.3 *
No (ref)	458.6	3.6

\* Significantly different from the reference group (ref) at less than the 0.05 level.

Source: Statistics Canada, Canadian Community Health Survey, cycle 1.2; Mental Health and Well-being, 2002



## Definitions

In the CCHS, respondents were initially asked if they had experienced several days or longer when most of the day they had felt sad, empty or depressed; or very discouraged about how things were going on in their lives; or they had lost interest in most things they usually enjoyed—like work, hobbies and personal relationships. Those responding in the affirmative to at least one scenario were asked more specific questions to determine if they had a lifetime history of major depression, and if they had experienced a major depressive episode in the previous 12 months.

In the NPHS, the criteria were simpler and respondents were asked only a subset of questions.

An overall score was calculated for each respondent, and the results transformed into a probability estimate of a diagnosis of major depression in the previous 12 months. An individual was considered to have experienced a major depressive episode if the probability of a correct diagnosis was 90% or greater. A complete listing of the specific questions for both surveys can be found in the original study (Gilmour and Patten 2007). In this analysis, CCHS estimates of a major depressive episode exclude persons reporting a lifetime episode of mania; these people are included in NPHS estimates, however.

Respondents were **employed** if they had worked the week before their interview, or had a job or business from which they had been temporarily absent, for reasons such as illness, vacation or family responsibilities. Both employees and the self-employed were surveyed.

CCHS **occupation** data were collapsed into three broad categories: white-collar (management; professionals; technologists, technicians and persons in technical occupations; and administrative, financial and clerical occupations), sales or service, and blue-collar (trades, transport and equipment operators; farming, forestry, fishing and mining; and processing, manufacturing and utilities). Occupations from the NPHS were categorized as white-collar (administrative and professional), sales or service, and blue-collar.

**Weekly work hours** is the number of hours *usually* worked at a job or business, including paid or unpaid extra hours.

**Work schedules** were: regular day schedule; regular evening or night shift; and rotating or irregular shift (split, 'on call', irregular and other work schedules).

Weekly work hours and schedules were based on the main job (i.e. the job involving the most weekly hours).

**Household income** ranges were based on the number of people in the household and their combined income from all sources in the preceding 12 months.

**Chronic health conditions** in the CCHS are long-term conditions that lasted or were expected to last six months or more and were diagnosed by a health care professional:

asthma; arthritis and rheumatism; back problems (other than fibromyalgia and arthritis); high blood pressure; migraine headaches; chronic bronchitis, emphysema and COPD (chronic obstructive pulmonary disease); diabetes; epilepsy; heart disease; cancer; stomach and intestinal ulcers; the effects of a stroke; bowel disorders (e.g. Crohns disease, colitis); Alzheimers disease and other dementia; cataracts; glaucoma; and thyroid conditions.

The NPHS considered: asthma; arthritis and rheumatism; back problems (other than arthritis); high blood pressure; migraine headaches; chronic bronchitis and emphysema; diabetes; epilepsy; heart disease; cancer; stomach and intestinal ulcers, the effects of a stroke; Alzheimers disease and other dementia; and glaucoma.

**Body Mass Index (BMI)** was calculated by dividing weight in kilograms by height in metres squared. Three categories were used: underweight/normal (BMI less than 25), overweight (25 to 29), and obese (30 and over).

Respondents were considered to have had an **anxiety disorder** in the past 12 months if they met the diagnostic criteria for panic disorder, or agoraphobia or social anxiety disorder during that period.

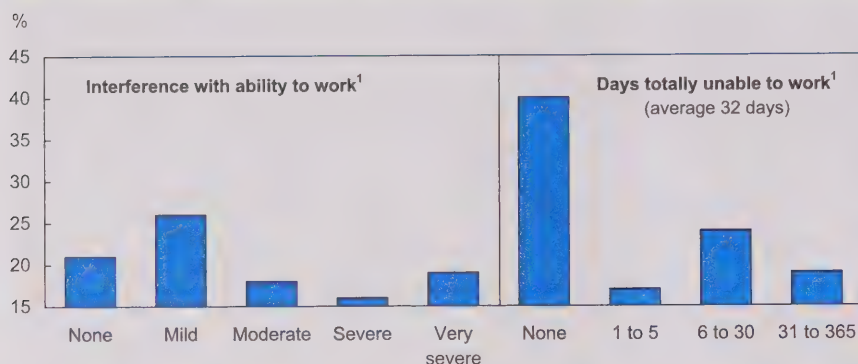
**Alcohol or drug dependence** in the past 12 months refers to respondents who met the criteria for dependence on alcohol or illicit drugs.

The **daily smoker** variable was available from NPHS respondents only.

### Household size and income

Income range	People in household	Total household income
		\$
Lowest	1 to 4 5 or more	Under 10,000 Under 15,000
Lower-middle	1 or 2 3 or 4 5 or more	10,000 to 14,999 10,000 to 19,999 15,000 to 29,999
Middle	1 or 2 3 or 4 5 or more	15,000 to 29,999 20,000 to 39,999 30,000 to 59,999
Upper-middle	1 or 2 3 or 4 5 or more	30,000 to 59,999 40,000 to 79,999 60,000 to 79,999
Highest	1 or 2 3 or more	60,000 or more 80,000 or more

**Chart A Most workers experiencing depression reported some impact on their job performance**



<sup>1</sup> In the past 12 months.

Source: Statistics Canada, Canadian Community Health Survey, cycle 1.2; Mental Health and Well-being, 2002

most severe. They were also asked how many days depressive symptoms had rendered them totally unable to work or carry out normal activities.

Most workers (8 in 10) who had experienced depression in the 12 months prior to their interviews reported that their symptoms had interfered with their ability to work to some degree (Chart A). For example, one in five had experienced very severe interference with their ability to perform their jobs, and an additional one-third had experienced moderate to severe interference. On average, workers with major depression had been totally unable to work or carry out normal activities for 32 days in the course of the previous year.

The marked degree to which depression interferes with the ability to function at work is not surprising, since symptoms can include a loss of energy, disinterest in the job and a diminished ability to focus on tasks, combined with feel-

ings of discouragement or hopelessness. Many elements crucial to competent job performance can be affected by such symptoms, for instance, time management, concentration, teamwork and overall output (Burton, Pransky, Conti et al. 2004).

Nonetheless, one in five workers who experienced depression in the previous year reported no interference at work. Even more (40%) never had a day when they had been totally unable to work or carry out normal activities. In the case of these workers, symptoms may have been relatively mild or not the kind to get in the way of work, or perhaps the impact of their depression had been greater in other aspects of their lives, such as their ability to carry out family responsibilities.<sup>7</sup> In fact, consistent with earlier research (Kessler, Berglund, Demler et al. 2003), mean interference scores (i.e. the degree to which depression was impeding various activities) were significantly higher in the realms of

respondents' social lives and home responsibilities than those of work (Chart B).

### Many aspects to work impairment

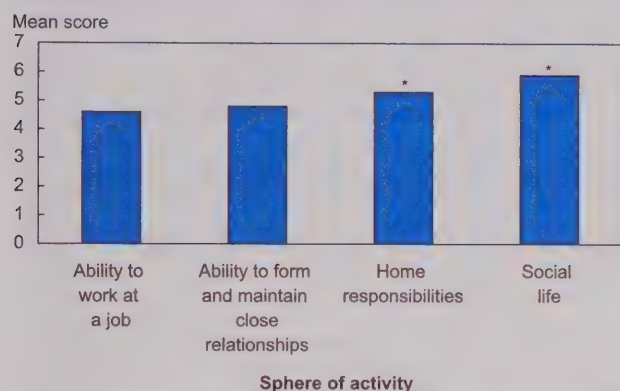
Workers who had experienced major depression were more likely than those with no history of the illness to report

- reduced work activities due to a long-term physical or mental condition or health problem
- at least one mental health disability day in the previous two weeks
- absence from work one or more days the previous week (see *Work impairment*).

Compared with workers declaring no history of major depression, those who had suffered an episode in the previous 12 months were about three times more likely (29% versus 10%) to report reduced work activities as a result of a long-term health condition (Chart C). Respondents who had not experienced depression in the previous year but had a lifetime history were also at increased risk of curtailing work activities (16%). In some cases, these workers may have intentionally cut back on their activities to reduce work stress and/or minimize the risk of another episode. They could also have been experiencing sub-clinical depression,<sup>8</sup> which has been linked to functional impairment (Martin, Blum, Beach et al. 1996).

Depression was also strongly associated with mental health disability days: 13% of workers who had experienced depression in the previous year reported at least one day in the two weeks preceding the interview when they had stayed in bed, cut down on normal activities or taken extra effort in carrying out



**Chart B Depression affected non-work activities more significantly**

\* Significantly different from the Ability to work at a job score at less than the 0.05 level.

Note: Scores range from 0 (no interference) to 10 (very severe interference); for more details, see *Work impairment*.

Source: Statistics Canada, Canadian Community Health Survey, cycle 1.2; Mental Health and Well-being, 2002

daily activities because of emotional or mental health, or the use of alcohol or drugs. By contrast, only 1% of workers without a history of depression reported one or more mental health disability days.

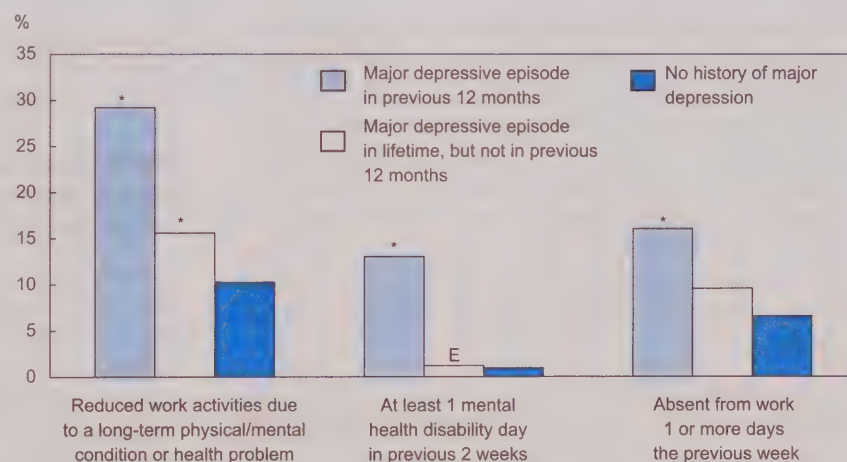
Work absences were far more common among people who had experienced depression during the previous year than among those with no history of depression: 16% of workers with depression reported having been absent at least one day the previous week, compared with 7% of respondents who had never experienced depression.

Depression often co-exists with other psychiatric illnesses, substance abuse or physical illnesses or conditions that can impede an individual's ability to work. To determine whether the associations between depression and work impairment were statistically signifi-

cant, multivariate models that controlled for these factors and other possible confounders (e.g. respondents' sociodemographic and job characteristics), were carried out (see *Data sources and methodology*). When the effects of these factors were taken into account, the associations between depression and work impairment continued to persist. Indeed, workers who had experienced a major depressive episode in the previous year had twice the odds of reporting reduced work activities and recent work absences, and six times the odds of having taken one or more mental health disability days in the previous two weeks, compared with those who had no history of depression (Table 2).

### Job characteristics may interact with the nature and severity of work impairment

The association between depression and work impairment may be particularly strong for people in certain occupations and employment situations. Consequently, the models for work impairment were rerun with interaction terms between depression and occupation, working hours and work schedule.

**Chart C Work impairment much higher among depression sufferers**

\* Significantly different from the estimate No history of major depression at less than the 0.05 level.

Source: Statistics Canada, Canadian Community Health Survey, cycle 1.2; Mental Health and Well-being, 2002

## Data sources and methodology

The 2002 **Canadian Community Health Survey (Cycle 1.2): Mental Health and Well-being** (CCHS) was conducted over May to December 2002, and covered people aged 15 and older living in private households in the 10 provinces. Residents of institutions, members of the regular Armed Forces and civilian residents of military bases were excluded, as were people living on Indian reserves and in certain remote areas.

One person from each sampled household was randomly selected to be interviewed and proxy responses were not accepted. The resulting sample comprised 36,984 individuals aged 15 or older.

The **National Population Health Survey** (NPHS) has collected information about the health of Canadians every two years since 1994/1995. The reference period in the survey is the previous twelve months. To deal with seasonal variation, collection takes place in June, August, November and March. The survey covers residents of households and institutions in all provinces and territories, excluding Indian reserves, Armed Forces bases, and some remote areas.

In 1994/1995, a sub-sample was selected from the 10 provinces to create a longitudinal panel of 17,626 persons. This study used the panel's 5<sup>th</sup> cycle, (2002/2003).

Multivariate logistic regression models examined associations between a major depressive episode in the preceding year (or at some earlier period, or not at all) and work impairment. The models were re-run to include interaction terms between depression and various job characteristics.

Separate regressions were run on working respondents who had experienced depression in the previous 12 months to

determine if various coping behaviours, as well as low co-worker, supervisor and emotional social support, were associated with work impairment.

Because of small sample sizes, the models were run for men and women combined. Interactions between sex and depression were not significant in any of the models.

Factors associated with reduced work activities and at least one disability day due to illness or injury in the previous two weeks were examined longitudinally. Four cohorts of observations were used for the analysis of reduced work activities (1994/1995 to 2000/2001 baseline years), and two cohorts (1994/1995 and 1996/1997 baseline years) for the analysis of at least one disability day in the previous two weeks. Workers aged 25 to 64 not reporting reduced work activities in baseline years were selected for the first model; those not reporting a disability day in the previous two weeks were selected for the second model.

Multivariate logistic regressions were carried out to examine workers baseline year characteristics in relation to reports of work impairment two years later. Some CCHS variables used in the cross-sectional models were not available on the NPHS's longitudinal file or were available for some cycles only.

All estimates and analyses were based on weighted data reflecting the age and sex distribution of the household population aged 15 and older in 2002 in the 10 provinces. To account for survey design effects, standard errors and coefficients of variation were estimated using the bootstrap technique (Yeo, Mantel and Liu 1999).

The interaction between depression and white-collar occupations was positive for reduced work activities. Although white-collar workers were generally less likely than blue-collar workers to reduce their work activities (Table 2), white-collar workers who had suffered a recent episode of depression had almost three times the odds of reducing their activities at work (data not shown). This difference may indicate that depression has a greater impact on activities that are more common in white-collar jobs compared with other occupations.

An association between depression and reduced work activities also emerged for people who regularly worked evening or night shifts, as opposed to those working regular daytime schedules.<sup>9</sup> A previous study showed relationships between evening shifts and psycho-social problems, chronic health conditions, sleep problems, and distress (Shields 2002). It may be that

depressive symptoms compound the impact of other health problems that are associated with shift work, thereby resulting in greater work impairment.

### Work impairment is associated with particular coping mechanisms and the absence of social support

In numerous studies, various types of coping behaviours and available support have been associated with the risk of depression and other mental illnesses (Park, Wilson and Lee 2004, Ramage-Morin 2004, and Wilkins 2004). However, few studies have examined whether these factors are also related to the job performance of workers with mental disorders.

CCHS results show that workers who had experienced a recent depressive episode often used coping mechanisms that differed from those of other workers (Chart D). For example, workers who had suffered a major



**Table 2 Depression and selected characteristics related to work impairment outcomes, employed 25 to 64 year-olds**

	Reduced work due to long-term physical/mental problem	At least 1 mental health disability day in previous 2 weeks	Absent from work 1 or more days in previous week
Adjusted odds ratio			
<b>Major depressive episode</b>			
In past 12 months	2.4*	6.2*	2.3*
In lifetime but not in past 12 months	1.3*	0.9	1.4
No history of major depression (ref)	1.0	1.0	1.0
<b>Sex</b>			
Men	1.1	0.8	0.6*
Women (ref)	1.0	1.0	1.0
<b>Age</b>			
25 to 44	1.2	0.8	0.9
45 to 64 (ref)	1.0	1.0	1.0
<b>Occupation</b>			
White-collar	0.7*	1.0	1.0
Sales or service	1.0	1.1	0.7*
Blue-collar (ref)	1.0	1.0	1.0
<b>Weekly work hours</b>			
1 to 29	1.2	1.1	0.9
30 to 40 (ref)	1.0	1.0	1.0
Over 40	1.0	0.5*	0.8*
<b>Work schedule</b>			
Regular day (ref)	1.0	1.0	1.0
Regular evening or night	1.0	1.7	1.2
Irregular or rotating shift	1.2	1.5	1.2
<b>High self-perceived work stress</b>			
Yes	1.4*	1.8*	1.2
No (ref)	1.0	1.0	1.0
<b>Marital status</b>			
Married or common-law (ref)	1.0	1.0	1.0
Divorced, separated or widowed	1.0	1.2	1.1
Single (never married)	1.1	1.7*	0.7*
<b>Education</b>			
High school graduation or less (ref)	1.0	1.0	1.0
Some postsecondary	1.1	0.8	1.0
Postsecondary certificate, diploma or degree	0.9	0.9	1.0
<b>Household income<sup>1</sup></b>			
Lowest, lower-middle or middle	1.1	1.0	0.9
Upper-middle or highest (ref)	1.0	1.0	1.0
<b>Existing chronic condition<sup>2</sup></b>	4.7*	1.9*	1.1
<b>Body Mass Index category<sup>1</sup></b>			
Underweight or normal (ref)	1.0	1.0	1.0
Overweight	1.2	1.4	1.2
Obese	1.5*	0.9	1.0
<b>Anxiety disorder in previous 12 months<sup>2</sup></b>	2.2*	5.9*	1.0
<b>Alcohol or drug dependence in previous 12 months<sup>2</sup></b>	1.4	3.8*	0.9

1 To maximize sample size, the models include a missing values category (odds ratios are not shown for these).

2 The reference group is the absence of the particular characteristic.

\* Significantly different from the reference group (ref) at less than the 0.05 level.

Note: Some odds ratios with lower/upper confidence interval limits of 1.0 were statistically significant before rounding.

Source: Statistics Canada, Canadian Community Health Survey, cycle 1.2; Mental Health and Well-being, 2002

depressive episode were significantly more likely to report that they coped with stress by avoiding people (66% vs. 33% of non-depressed workers), using negative means of tension reduction (e.g. drinking alcohol or smoking more than usual—82% vs. 53%), blaming themselves (74% vs. 50%), or wishing the situation would go away (91% vs. 76%). Moreover, when dealing with stress, those with depression were less inclined to talk to others (76% compared with 83% for those without depression) or try looking on the bright side (88% vs. 95%).

Depressed workers were also more likely to report low levels of co-worker support (47% vs. 32%), low supervisor support (24% vs. 17%) and low emotional social support (24% vs. 12%).

A multivariate model was used to adjust for sex, age, occupation, work hours, schedules, self-perceived work stress, marital status, education, income, chronic conditions, weight, and anxiety disorder or alcohol/drug dependence in the past 12 months. Coping behaviours and support variables were then entered individually. For the all workers group, the model also adjusted for depression.

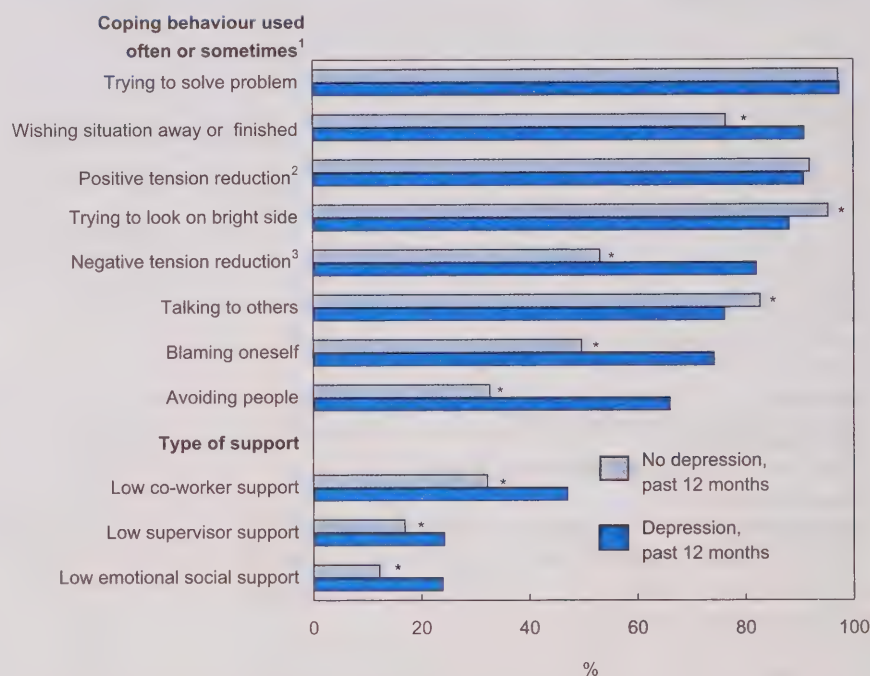
Among employed respondents in general, most of the coping and support variables examined (7 out of 11—Table 3) were associated with having taken at least one mental health disability day in the previous two weeks, or having reduced work activities. When workers reporting a depressive episode were considered, only two variables were significant: trying to look on the bright side and low co-worker support.

'Trying to look on the bright side' reduced the odds of workers with depression taking at least one mental health disability day in the two weeks preceding their interviews. However, it is possible that the coping strategies assessed by the CCHS were influenced by the nature and extent of depressive symptoms. For example, because depressed people often have a negative perspective, the association with 'looking on the bright side'

may reflect workers with mild, rather than moderate or severe, depression.

Low co-worker support increased the odds of depressed workers being absent from work one or more days the previous week. But because this analysis is cross-sectional, the direction of the association cannot be ascertained. It is not clear whether low co-worker support influenced work absence or vice versa.

**Chart D Depression sufferers more likely to use negative coping behaviours**



<sup>1</sup> Respondents were not considered to use a particular coping behaviour when they reported doing it rarely or never.

<sup>2</sup> Jogging or other exercise, praying or seeking spiritual help, doing something enjoyable.

<sup>3</sup> Sleeping more than usual, eating more or less than usual, smoking more cigarettes than usual, drinking alcohol, using drugs or medication.

\* Significantly different from the corresponding estimate for persons reporting a major depressive episode in the past 12 months at less than the 0.05 level.

Source: Statistics Canada, Canadian Community Health Survey, cycle 1.2; Mental Health and Well-being, 2002



**Table 3 Coping behaviours and support related to work impairment outcomes, employed 25 to 64 year-olds**

	Reduced work due to long-term physical/mental problem		At least 1 mental health disability day in previous 2 weeks		Absent from work 1 or more days in previous week	
	All workers	Depression in past 12 months	All workers	Depression in past 12 months	All workers	Depression in past 12 months
<b>Coping behaviour used often or sometimes<sup>1</sup></b>	Adjusted odds ratio					
Trying to solve problem	0.8	0.9	0.7	0.8	1.0	...
Wishing situation away or finished	1.3*	0.6	2.1*	0.6	0.9	0.8
Positive tension reduction <sup>2</sup>	0.9	0.5	1.1	2.1	0.7	0.4
Trying to look on bright side	0.9	0.7	0.5*	0.3*	0.9	1.4
Negative tension reduction <sup>3</sup>	1.4*	0.8	3.1*	2.6	1.2	1.2
Talking to others	0.8*	1.0	0.7*	0.6	0.9	1.6
Blaming oneself	1.1	1.7	1.3	1.3	1.1	1.4
Avoiding people	1.1	1.0	1.4	0.7	1.1	1.3
<b>Type of support</b>						
Low co-worker support	1.1	1.1	1.7*	0.8	1.1	1.9*
Low supervisor support	1.0	1.3	1.7*	1.1	1.3	1.1
Low emotional social support	1.5*	1.5	1.9*	1.7	0.7	1.1

1 As opposed to rarely or never (the reference group).

2 Jogging or other exercise, praying or seeking spiritual help, doing something enjoyable.

3 Sleeping more than usual, eating more or less than usual, smoking more cigarettes than usual, drinking alcohol, using drugs or medication.

\* Significantly different from the reference (ref) group at less than the 0.05 level.

Note: Some odds ratios with lower/upper confidence interval limits of 1.0 were statistically significant before rounding.

Source: Statistics Canada, Canadian Community Health Survey, cycle 1.2; Mental Health and Well-being, 2002

## Long-term consequences of depression

With cross-sectional data, it is not possible to determine whether depression leads to work impairment, or if workers who are limited in what they can do on the job are more likely to experience depression. Longitudinal data from the National Population Health Survey (NPHS) were used to shed light on the temporal sequence of these events.

For example, it is possible to examine whether workers who had experienced depression were more likely to suffer work impairments two years down the road. The longitudinal multivariate analysis shows that there are greater odds of work impairment two years later for individuals experiencing depression. Indeed, for workers who experienced depression the odds of having to reduce work activities two years later as a result of a long-term physical or mental condition were 1.4

times higher than for those who had not experienced a major depressive episode (Table 4). In addition, looking at work absences due to disability days taken shows that workers who were depressed had 1.8 times the odds of having these types of absences two years later, suggesting that the effects of depression on job performance can be long lasting. Other variables, however, were also indicative of work impairment. For example, workers who had chronic conditions, or were obese, also had higher odds of reducing their work activities or taking at least one disability day.

## Conclusion

In 2002, nearly half a million employed Canadians aged 25 to 64, almost 4% of the workforce, reported the occurrence of a major depressive episode in the previous 12 months. An additional million workers had

**Table 4 Depression and selected characteristics related to new cases<sup>1</sup> of work impairment 2 years later, employed 25 to 64 year-olds**

	Reduced work due to long- term physical/ mental problem	At least 1 disability day in previous 2 weeks due to illness or injury
	Adjusted odds ratio	
<b>Major depressive episode in previous 12 months<sup>2</sup></b>	1.4*	1.8*
<b>Sex</b>		
Men	0.9	0.7*
Women (ref)	1.0	1.0
<b>Age</b>		
25 to 44	0.8	1.0
45 to 64 (ref)	1.0	1.0
<b>Occupation</b>		
White-collar	0.8	1.2
Sales or service	0.8*	1.0
Blue-collar (ref)	1.0	1.0
<b>Weekly work hours</b>		
1 to 29	1.2	0.9
30 to 40 (ref)	1.0	1.0
Over 40	1.0	0.8*
<b>Work schedule</b>		
Regular day (ref)	1.0	1.0
Regular evening or night	1.3	1.2
Irregular or rotating shift	1.1	1.2
<b>Marital status</b>		
Married or common-law (ref)	1.0	1.0
Divorced, separated or widowed	1.2	1.4*
Single (never married)	1.3*	1.2
<b>Education<sup>3</sup></b>		
High school graduation or less (ref)	1.0	1.0
Some postsecondary	0.7*	1.0
Postsecondary certificate, diploma or degree	0.7*	1.0
<b>Household income<sup>3</sup></b>		
Lowest, lower-middle or middle	1.1	0.9
Upper-middle or highest (ref)	1.0	1.0
<b>Chronic condition<sup>2</sup></b>	2.7*	1.8*
<b>Body Mass Index category<sup>3</sup></b>		
Underweight or normal (ref)	1.0	1.0
Overweight	1.1	1.1
Obese	1.3*	1.4*
<b>Low emotional social support<sup>2</sup></b>	1.2	0.9
<b>Daily smoker<sup>2</sup></b>	1.4*	1.2

1 New cases were reported by respondents who had not declared work impairment two years earlier.

2 The reference group is the absence of the particular characteristic.

3 To maximize sample size, the models include a missing values category (odds ratios are not shown for these).

\* Significantly different from the reference group (ref) at less than the 0.05 level.

Note: Some odds ratios with lower/upper confidence interval limits of 1.0 were statistically significant before rounding.

Source: Statistics Canada, National Population Health Survey, 1994-1995 to 2002-2003

experienced depression during some other period in their lives. The incidence of depression for women in the labour force was almost two times that of working men, and depression was less prevalent for workers who were married or in common-law relationships.

Consistent with similar research,<sup>10</sup> this study shows that depression is associated with both work absences and lost productivity in the form of reduced work activities. The analysis also reveals that depression has associations with work impairment that persist when the effects of workers' occupations, health conditions and sociodemographic characteristics are taken into account. There is also evidence that the effects of depression on job performance can be long lasting.

This analysis highlights the importance of white-collar occupations and night/evening shift work schedules in the link between depression and work impairment. As well, depressed workers dealing with stress often use coping mechanisms that may not be beneficial and differ from those favoured by other workers. Nevertheless, coping by trying to 'look on the bright side,' and the availability of co-worker support, may buffer the impact of depression on job performance.

### Perspectives

### Notes

1 See Lerner, Adler, Chang et al. 2004a; Marcotte and Wilcox-Gok 2001; and Virtanen, Kivimäki, Elovainio et al. 2005.



## Work impairment

CCHS respondents reporting a major depressive episode in the preceding 12 months were asked more specific questions about the period lasting 1 month or longer, when their depression was most severe. They rated, on a scale of 0 (no interference) to 10 (very severe interference), how much their depression had interfered with:

- ability to work at a job
- home responsibilities
- ability to form and maintain close relationships with other people
- social life.

Odds ratios for **reduced work activities** were based on responses of often or sometimes (as opposed to never) to the CCHS question: "Does a long-term physical condition or mental condition or health problem reduce the amount or the kind of activity you can do: ... at work?" The NPHS question was similar, but responses were categorized as yes or no.

Respondents who had stayed in bed because of illness or injury (including nights spent as a patient in a hospital) during the previous two weeks were asked the number of days they did so.

Excluding days spent in bed, respondents were then asked if they had cut down on normal activities because of illness or injury; or, if it had taken extra effort to perform up to their usual level at work or when engaged in other daily activities. For both, the number of days was recorded. For any positive responses, persons were asked if this was due to emotional or mental health or use of alcohol or drugs.

CCHS respondents were considered to have experienced at least one mental health disability day in the previous 2 weeks if they reported spending at least one day during that period: in bed (most or all of the day) or having to cut down on normal activities (most or all of the day) or needing to expend extra effort to perform daily activities—because of their emotional or mental health, or their use of alcohol or drugs.

The equivalent NPHS-derived variable was compiled somewhat differently. Respondents were considered to have spent at least one disability day in the previous 2 weeks due to illness or injury if they had stayed in bed all or most of the day or cut down on normal activities as a result. The NPHS did not probe emotional or mental ill-health, or the use of alcohol or drugs.

2 This estimate combines the costs for people who suffered depression and distress at the same time, with the costs for those who suffered depression in isolation.

3 This pattern is also seen in the general population. For more information on gender differences in depression, see De Marco (2000), Noble (2005), Kuehner (2003), and Kessler, Berglund, Demler et al. (2003).

4 Other studies (for example, Kessler, Berglund, Demler et al. 2003, and Verhaak, Heijmans, Peters et al. 2005) have also associated depression with physical and mental comorbidity.

5 This finding is supported by other studies that have found differences in the prevalence of depression by occupation (De Marco 2000, Dewa and Lin 2000, and Wilhelm, Kovess, Rios-Seidel et al. 2004).

6 This association is consistent with earlier research that revealed a link between mental health and shift work (Shields 2002).

7 The 'days totally unable to work' variable likely underestimates the impact of depression on job performance, since this measure does not capture days when respondents went to work but could not fully carry out their duties. In other studies, mental disorders were found to be more strongly associated with days during which workers had to expend extra effort or cut back on work activities rather than complete days of work loss. Moreover, the former accounted for a greater proportion of the total economic costs of mental disorders borne by employers (Dewa and Lin 2000, Lim, Sanderson and Andrews 2000, and Stewart, Ricci, Chee et al. 2003).

8 Depressive symptoms are present but do not meet the diagnostic criteria for a major depressive episode.

9 This was evidenced by an odds ratio of 2.88, with a 95% confidence interval of 1.04 to 7.95 (data not shown).

10 See Lerner, Adler, Chang et al. 2004a, De Marco 2000, Lim, Sanderson and Andrews 2000, Stewart, Ricci, Chee et al. 2003, Kouzis and Eaton 1994, Lerner, Adler, Chang et al. 2004b, and Wang, Beck, Berglund et al. 2003.

## ■ References

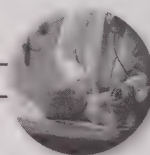
- American Psychiatric Association (APA). 2000. *Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition, Text Revision (DSM-IV-TR)*. Washington, D.C.
- American Psychiatric Association (APA). 1980. *Diagnostic and Statistical Manual of Mental Disorders, Third Revised Edition (DSM-III-R)*. Washington, D.C.
- Béland Yves, Jules Dufour and Ronald Gravel. 2001. "Sample Design of the Canadian Mental Health Survey." *Proceedings of the Survey Methods Section*. Vancouver: Statistical Society of Canada. p. 93-98.
- Burton, Wayne N., Glenn Pransky, Daniel J. Conti et al. 2004. "The association of medical conditions and presenteeism." *Journal of Occupational and Environmental Medicine*. No. 46 (6 Suppl.), S38-S45.
- De Marco, R. R. 2000. "The epidemiology of major depression: Implications of occurrence, recurrence, and stress in a Canadian community sample." *Canadian Journal of Psychiatry*. Vol. 45, no. 1, p. 67-74.
- Dewa, Carolyn S. and Elizabeth Lin. 2000. "Chronic physical illness, psychiatric disorder and disability in the workplace." *Social Science & Medicine*. Vol. 51, issue 1, p. 41-50.
- Gilmour Heather and Scott B. Patten. 2007. "Depression and work impairment." *Health Reports*. Vol. 18, no. 1. February 2007. Statistics Canada Catalogue no. 82-003-XIE. p. 9-20.  
<http://www.statcan.ca/english/freepub/82-003-XIE/82-003-XIE2006003.pdf> (accessed November 16, 2007).  
<http://www.statcan.ca/english/freepub/82-003-XIE/2006001/articles/depression.htm> (accessed November 16, 2007).
- Kessler, Ronald C., Patricia Berglund, Olga Demler et al. 2003. "The epidemiology of major depressive disorder: results from the National Comorbidity Survey Replication (NCS-R)." *Journal of the American Medical Association (JAMA)*. Vol. 289, no. 23, p. 3095-3105.
- Kessler, Ronald C., Paul E. Greenberg, Kristin D. Mickelson et al. 2001. "The effects of chronic medical conditions on work loss and work cutback." *Journal of Occupational and Environmental Medicine*. Vol. 43, no. 3, p. 218-225.
- Kessler, Ronald C., K.A. McGonagle, S. Zhao et al. 1994. "Lifetime and 12-month prevalence of DSM-III-R psychiatric disorders in the United States." Results from the National Comorbidity Survey. *Archives of General Psychiatry*. No. 51, p. 8-19.
- Kouzis, Anthony C. and William W. Eaton. 1994. "Emotional disability days: Prevalence and predictors." *American Journal of Public Health*. Vol. 84, no. 8, p. 1304-1307.
- Kuehner C. 2003. "Gender differences in unipolar depression: an update of epidemiological findings and possible explanations." *Acta Psychiatrica Scandinavica*. Vol. 108, no. 3, p. 163-174.
- Lerner Debra, David A. Adler, Hong Chang et al. 2004. "Unemployment, job retention, and productivity loss among employees with depression." *Psychiatric Services*. Vol. 55, no. 12, p. 1371-1378.
- Lerner Debra, David A. Adler, Hong Chang et al. 2004. "The clinical and occupational correlates of work productivity loss among employed patients with depression." *Journal of Occupational and Environmental Medicine*. No. 46 (6 Suppl.), S46-S55.
- Lim D., G. Andrews and K. Sanderson. 2000. "Lost productivity among full-time workers with mental disorders." *The Journal of Mental Health Policy and Economics*. Vol. 3, no. 3, p. 139-146.
- Marcotte, Dave E. and Virginia Wilcox-Gok. 2001. "Estimating the employment and earnings costs of mental illness: Recent developments in the United States." *Social Science and Medicine*. Vol. 53, no. 1, p. 21-27.
- Martin, J.K., T.C. Blum, S.R. Beach et al. 1996. "Sub-clinical depression and performance at work." *Social Psychiatry and Psychiatric Epidemiology*. Vol. 31, no. 1, p. 3-9.
- National Health Population Survey – Household Component - Longitudinal, Cycle 6 (2004-2005)*, Health Information and Research Division, Statistics Canada, Ottawa, 2006.
- Noble, R.E. 2005. "Depression in women." *Metabolism*. Vol. 54, no. 5 (Suppl. 1), p. 49-52.
- Park Kyoung-Ok, Mark G. Wilson and M.S. Lee. 2004. "Effects of social support at work on depression and organizational productivity." *American Journal of Health Behavior*. Vol. 28, no. 5, p. 444-455.
- Ramage-Morin, Pamela L. 2004. "Panic disorder and coping." *Health Reports*. Statistics Canada Catalogue no. 82-003, vol. 15, supplement, p. 33-45.  
<http://www.statcan.ca/bsolc/english/bsolc?catno=82-003-S20040007445> (accessed November 16, 2007). Supplement to Health Reports. 2004. "Annex." Statistics Canada Catalogue no. 82-003-S, vol. 15, p. 49-63.



- Shields, Margot. 2006. "Stress and depression in the employed population." *Health Reports*. Statistics Canada Catalogue no. 82-003. Vol. 17, no. 4, p. 11-29.  
<http://www.statcan.ca/bsolc/english/bsolc?catno=82-003-X20050049495> (accessed November 16, 2007).
- Shields, Margot. 2002. "Shift work and health." *Health Reports*. Statistics Canada Catalogue no. 82-003. Vol. 13, no. 4, p. 11-33.  
<http://www.statcan.ca/bsolc/english/bsolc?catno=82-003-X20010046315> (accessed November 16, 2007).
- Statistics Canada. 2002. *Canadian Community Health Survey (CCHS): Mental Health and Well-being—Cycle 1.2*. Available at <http://www.statcan.ca/english/concepts/hs/index.htm> (accessed October 15, 2007).
- Statistics Canada. 2004. "Annex: Definitions of mental disorders in the Canadian Community Health Survey: Mental health and well-being." *Health Reports*. Supplement to Volume 15. Catalogue no. 82-003-SPE. p. 65-79.
- Stephens, Tomas and Natacha Joubert. 2001. "The economic burden of mental health problems in Canada." *Chronic Diseases in Canada*. Vol. 22, no. 1, p. 18-23.
- Stewart, Walter F, Judith A. Ricci, Elsbeth Chee et al. 2003. "Cost of lost productive work time among US workers with depression." *Journal of the American Medical Association (JAMA)*. Vol. 289, no. 23, p. 3135-3144.
- Swain, Larry, Gary Catlin and Marie P. Beaudet. 1999. "The National Population Health Survey—its longitudinal nature." *Health Reports*. Statistics Canada Catalogue 82-003. Vol. 10, no. 4, p. 69-82.  
<http://www.statcan.ca/bsolc/english/bsolc?catno=82-003-X&CHROPG=1&YR=1> (accessed November 16, 2007).
- Tambay, Jean-Louis and Gary Catlin. 1995. "Sample design of the National Population Health Survey." *Health Reports*. Statistics Canada Catalogue no. 82-003. Vol. 7, no. 1, p. 29-42.  
<http://www.statcan.ca/bsolc/english/bsolc?catno=82-003-X&CHROPG=1&YR=1> (accessed November 16, 2007).
- Ustun, T.B., J - L Yuso-Mateos, S. Chatterji et al. 2004. "Global burden of depressive disorders in the year 2000." *British Journal of Psychiatry*. Vol. 184, p. 386-392.
- Verhaak, Peter F., Monique J. Heijmans et al. 2005. "Chronic disease and mental disorder." *Social Science and Medicine*. Vol. 60, no. 4, p. 789-797.
- Virtanen, Mariana, Mika Kivimäki, Marko Elovainio et al. 2005. "Mental health and hostility as predictors of temporary employment: Evidence from two prospective studies." *Social Science and Medicine*. Vol. 61, no. 10, p. 2084-2095.
- Wang, Jianli. 2005. "Work stress as a risk factor for major depressive episode(s)." *Psychological Medicine*. Vol. 35, no. 6, p. 865-871.
- Wang, Philip S., Arne Beck, Patricia Berglund et al. 2003. "Chronic medical conditions and work performance in the health and work performance questionnaire calibration surveys." *Journal of Occupational and Environmental Medicine*. Vol. 45, no. 12, p. 1303-1311.
- Wilhelm, Kay, Vivianne Kovess, Carmen Rios-Seidel et al. 2004. "Work and mental health." *Social Psychiatry and Psychiatric Epidemiology*. Vol. 39, no. 11, p. 866-73.
- Wilkins, Kathryn. 2004. "Bipolar 1 disorder, social support and work." *Health Reports*. Statistics Canada Catalogue no. 82-003, 15 (Suppl.), p. 21-30.  
<http://www.statcan.ca/bsolc/english/bsolc?catno=82-003-S&CHROPG=1> (accessed November 16, 2007).
- World Health Organization (WHO). *CIDI Online*.  
<http://www.who.int/whosis/en/index.html> (accessed November 16, 2007).
- Yeo, Douglas, H. Mantel and T.P. Liu. 1999. "Bootstrap variance estimation for the National Population Health Survey." *Proceedings of the Annual Meeting of the American Statistical Association, Survey Research Methods Section*. Baltimore. American Statistical Association.

# Looking for health information online?

## Link up with Statistics Canada's *Guide to Health Statistics!*



**T**he *Guide to Health Statistics* is a series of **online links** that lead you to health information published by Statistics Canada.

Let [www.statcan.ca](http://www.statcan.ca)'s *Guide to Health Statistics* be your passage to the world of health information. In the *Guide* you'll discover links to:

- vital statistics
- cancer statistics
- health determinants
- health status
- health care issues
- and much more. . .

**Find the information you need now.** Link up to a host of online products, documents and surveys like the National Population Health Survey. The *Guide to Health Statistics* allows you to search and locate exactly what you're looking for.

**Save time.** A few clicks and you'll be connected to health information from [www.statcan.ca](http://www.statcan.ca), your source for health facts and analysis.

**Access anywhere, anytime.** You get current detailed information quickly and efficiently thanks to continuous updates, regardless of location and time constraints.

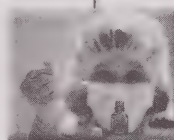
**Put the data to work.** Copy text from online right into your documents and databases.

### Expertise you can trust!

You can count on relevant dependable information with a unique focus on Canada-wide indicators from Statistics Canada. So, when you're on the lookout for first-rate health facts and analysis, allow the *Guide to Health Statistics* on [www.statcan.ca](http://www.statcan.ca) to be your bridge to health information.

**It's easy!** Visit our site at [www.statcan.ca](http://www.statcan.ca), click on Canadian Statistics and then choose Health. Click on the *Guide to Health Statistics* banner and let your mouse lead the way.

**Bookmark it!**



Here are some of the handy links you'll find in the *Guide to Health Statistics*

### Links to insightful analysis and data on:

- Cancer

### Health Surveys

- Canadian Community Health Survey (CCHS)
- National Population Health Survey (NPHS)
- Smoking and Tobacco Use Surveys
- Health Care
- Therapeutic Abortions
- Vital Statistics

### Sample links to related sites:

- Canadian Cancer Statistics
- Canadian Institute for Health Information (CIHI)
- Health Canada
- Canadian Health Network



Health information? We've got connections!



# What's new?

## *Recent reports and studies*

### ■ FROM STATISTICS CANADA

#### ■ *Registered retirement savings plans*

The number of taxfilers contributing to registered retirement savings plans (RRSPs), and the amount contributed both increased for the third consecutive year in 2006.

Contributions rose 5.8% to \$32.4 billion. Almost 6.2 million taxfilers contributed to an RRSP in 2006, an increase of 60,000 or 1.0% from 2005. This was the highest level since 2001. Alberta had the largest gain in contributors, almost 26,000.

Almost 88% of taxfilers were eligible to contribute to an RRSP for the 2006 tax year, up from 86% in 2005. Of those eligible, about 31% actually made contributions, which is comparable to 2005.

For more information, see the November 8, 2007 issue of *The Daily* on the Statistics Canada's website ([www.statcan.ca](http://www.statcan.ca)).

#### ■ *Savers and investors*

The number of taxfilers reporting investment income, as well as the amount, increased for the third consecutive year in 2006. Investment income refers to dividend income from taxable Canadian corporations and interest income from investments in non-tax-sheltered vehicles.

Nationally, over 8.2 million people reported \$40.9 billion of investment income, the highest number since 2000, when some 8.5 million did so.

In 2006, the number of people reporting investment income was up 5.4%. Income was up 16.3%, more than double the 7.9% in 2005.

For more information, see the November 6, 2007 issue of *The Daily* on the Statistics Canada's website ([www.statcan.ca](http://www.statcan.ca)).

#### ■ *Delayed transitions of young adults*

Young adults were taking longer to make key life transitions to adulthood in 2001 than their counterparts three decades earlier.

Overall, the transition to adulthood in 2001 was more protracted than in 1971. Young adults were leaving school later, staying longer in their parents' home, entering the labour market later, and postponing conjugal unions and childbearing.

Young women were generally making life transitions earlier than young men, as in 1971. However, women in 2001 were often making various transitions at different times than young women 30 years earlier.

For more information, see the September 18, 2007 issue of *The Daily* on the Statistics Canada's website ([www.statcan.ca](http://www.statcan.ca)).

#### ■ *Women in the core public administration*

The core public administration (CPA)—the 178,000 or so federal public servants for whom the Treasury Board is the employer—represented 46.7% of total federal employment in 2006.

Overall, the federal public service was smaller in 2006 than 11 years earlier. Also, the composition of the CPA has been changing in tune with the times.

More women than men can now be found in both knowledge-based and less knowledge-based occupations in the CPA. (Knowledge-based workers include, among others, scientific and professional workers, and those involved in computer systems, while less knowledge-based workers include technical, operational and administrative staff.)

For more information, see the September 4, 2007 issue of *The Daily* on the Statistics Canada's website ([www.statcan.ca](http://www.statcan.ca)).

#### ■ *Investment and long-term growth in labour productivity*

Investment in capital, rather than increased worker skills or technological change, was the most important factor in the growth in labour productivity in the business sector during the past four decades.

Between 1961 and 2005, labour productivity, one of the key indicators of an economy's health, rose at an annual rate of 2.1%.

During this 45-year period, increases in capital intensity were the most important factor, contributing about 55% of growth in labour productivity.

Multifactor productivity, the second most important factor, accounted for about one-quarter of the growth in labour productivity during this period. Growth in this area is often associated with technological change, organizational change or economies of scale.

The remainder, about 20%, came from changes in the composition of labour. A positive labour composition effect reflects the increase in the average educational attainment and experience levels of workers.

For more information, see the June 25, 2007 issue of *The Daily* on the Statistics Canada's website ([www.statcan.ca](http://www.statcan.ca)).

### ■ *Trade and industrial specialization*

Canada's manufacturing sector more than doubled its level of export intensity—that is, exports as a proportion of total manufacturing output—between 1974 and 1999.

However, this growing integration into the global markets through trade has not been accompanied by an increase in industrial specialization in the various regions of the country. This is particularly true of the post-1990 free-trade era.

It has long been thought that increased trade might lead to greater industrial specialization (the degree to which employment in particular places is concentrated in specific industries). Higher levels of industrial specialization are associated with greater vulnerability to economic shocks resulting from the loss of a key industry.

For more information, see the June 25, 2007 issue of *The Daily* on the Statistics Canada's website ([www.statcan.ca](http://www.statcan.ca)).

## ■ FROM OTHER ORGANIZATIONS

### ■ *Productivity in the past decade*

Remarkably diverse patterns of labour productivity growth have been observed in advanced countries over the past 10 years or so. Labour productivity

growth in Canada picked up over the late 1990s, only to fall back in the next five years to the sluggish pace of the 1974-to-1996 period.

The same pattern was observed in Australia and New Zealand, but with much less amplitude. In contrast, average productivity growth in 11 European Union countries has fallen markedly compared with the previous 20 years, while in the United States it has shifted to persistently higher levels.

These patterns reflect, to varying degrees, changes in trend productivity growth, business-cycle influences, lags in the impact of macroeconomic policies, and the effects of transitory sector-specific developments. See "Interpreting Canada's productivity performance in the past decade: Lessons from recent research" by Richard Dion, *Bank of Canada Review*, Summer 2007, p. 19-32.

### ■ *Trend labour supply in Canada*

Over the past 25 years, labour input growth has been driven by growth of the working-age population and a steady rise in the aggregate employment rate stemming from an increase in the labour market attachment of women.

Looking ahead, growth of the working-age population is projected to slow substantially over the coming decades, owing to the cumulative impact of past declines in the national fertility rate.

It appears that the increased proportion of older individuals in the working-age population, whose average employment rates are lower than those of prime-age workers, is beginning to exert downward pressure on the aggregate trend employment rate.

Aging of baby boomers is projected to put downward pressure on labour input growth. Without an offsetting increase in labour productivity, this will imply lower potential output growth in the coming decades. See "Trend labour supply in Canada: Implications of demographic shifts and the increasing labour force attachment of women" by Russell Barnett, *Bank of Canada Review*, Summer 2007, p. 5-18.



# Varia

*In this issue: International comparisons*

## PREVIOUS UPDATES

Retirement – Summer 2006  
Minimum wage – Winter 2006  
Work absence rates – Summer 2007  
Gambling – Summer 2007

## ECONOMIC AND SOCIAL INDICATORS

Provincial wealth inequality – Spring 2005  
Tourism – Summer 2005  
Residential construction – Autumn 2005  
Education – Winter 2005  
Personal debt – Spring 2007

## CONTACTS

### Administrative data

*Small area and administrative data*  
Client Services  
613-951-9720

### Business surveys

*Annual Survey of Manufactures and Logging*  
Client Services  
613-951-9497

*Annual surveys of service industries*  
Client Services  
613-951-4612

*Business Conditions Survey of Manufacturing Industries*  
Claude Robillard  
613-951-3507

### Census

*Labour force characteristics*  
Sandra Swain  
613-951-6908

*Income statistics*  
Eric Olson  
613-951-0220

### Employment and income surveys

*Labour Force Survey*  
Marc Lévesque  
613-951-4090

*Survey of Employment, Payrolls and Hours*  
Sylvie Picard  
613-951-4003

*Employment Insurance Statistics Program*  
Gilles Groleau  
613-951-4091

*Major wage settlements*  
Workplace Information Directorate (Human Resources and Social Development Canada)  
819-997-3117 or 1 800 567-6866

*Labour income*  
Anna MacDonald  
613-951-3784

*Survey of Labour and Income Dynamics*  
*Survey of Financial Security*  
*Survey of Household Spending*  
Client Services  
613-951-7355 or 1 888 297-7355

### General Social Survey

*Education, work and retirement*  
*Aging and social support*  
*Time use*  
Client Services  
613-951-5979

### Pension surveys

*Pension Plans in Canada Survey*  
Bruno Pépin  
613-951-4023

*Quarterly Survey of Trusteed Pension Funds*  
Gregory Sannes  
613-951-4034

### Special surveys

*Adult Education and Training Survey*  
Client Services  
613-951-7608 or 1 800 307-3382

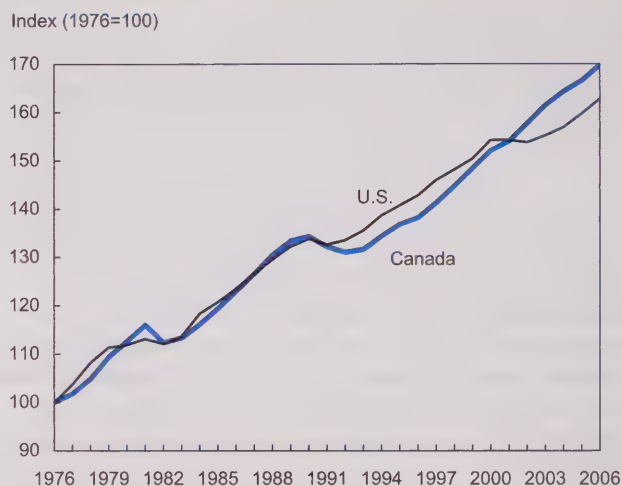
*National Graduates Survey*  
Client Services  
613-951-7608

# International comparisons

Employment growth in Canada and in the United States has historically been similar. However, during the 2001 to 2003 period, there was very little employment growth in the United States (0.6%), while Canada enjoyed a 4.8% increase.

From 2003 to 2006, employment growth picked up in the United States (4.9%) but was still slightly below the growth experienced in Canada (5.2%). A total of 3 million manufacturing jobs were lost in the United States between 2000 and 2006 (-16.6%). Canada also lost manufacturing jobs during this period (-5.8%) but employment has been steadily increasing in the services sector for both Canada and the United States.

**Chart A** Employment trends diverged between Canada and the United States



Note: Canadian data have been adjusted to approximate U.S. measurement concepts.

Sources: Statistics Canada, Labour Force Survey; U.S. Bureau of Labor Statistics, Current Population Survey

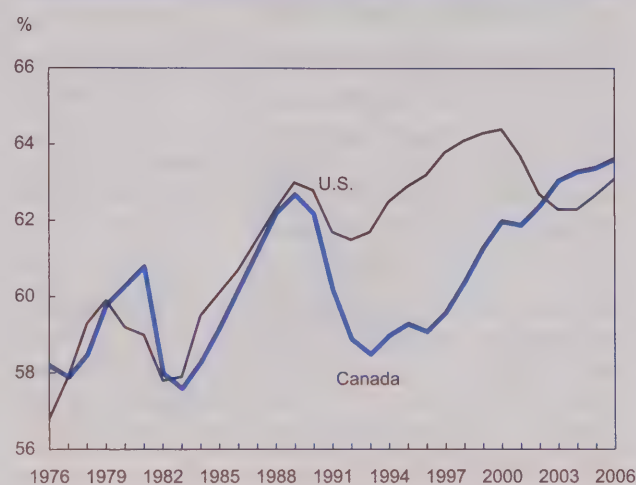


For the last four years, Canada's employment rate has remained at record levels, surpassing the employment rate of the United States for the first time in over two decades. In 2006, 63.6% of the Canadian population was employed compared with 63.1% of the American population—however, the gap is shrinking. A larger proportion of the American population was working in 2006 than in 2005 (0.4 percentage points), whereas the proportion of the Canadian population employed in 2006 was up only marginally (0.2 points) from a year earlier.

Historically, both labour markets have generally followed similar employment rate trends, but differences emerged in the 1990s and early 2000s. From 1989 to 1993, the Canadian economy shrank more than the U.S. economy: the gross domestic product fell 3.0% in Canada, twice the drop in the United States. At the same time, the Canadian employment rate fell 4.2 percentage points, while the American rate declined by 1.3 points.

In contrast, from the fourth quarter of 2000 to the third quarter of 2001, the U.S. economy suffered a mild recession (-0.6%) while the Canadian economy expanded slightly (0.1%). As both economies began to pick up in the fourth quarter of 2001, Canada's growth was much stronger. While Canada's employment rate continued on an upward trend, the U.S. rate declined after reaching its record high of 64.4% in 2000. Only in the last two years has the American employment rate shown signs of revival.

**Chart B** Canada maintains record high employment rate in 2006



Note: Canadian data have been adjusted to approximate U.S. measurement concepts.

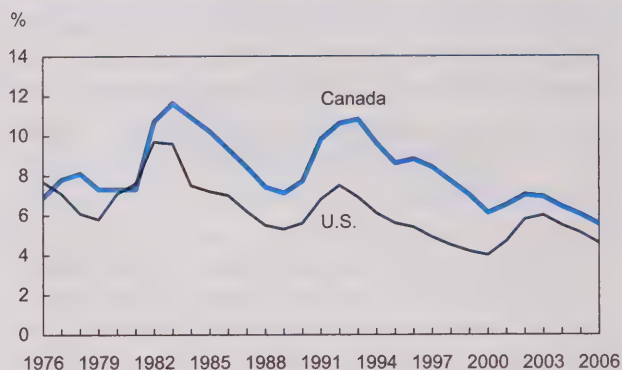
Sources: Statistics Canada, Labour Force Survey; U.S. Bureau of Labor Statistics, Current Population Survey

The Canadian unemployment rate (adjusted to the U.S. definition) has dropped in the last 13 years, from a high of 10.8% in 1993 to a new low of 5.5% in 2006. The U.S. unemployment rate, having reached a high of 7.5% in 1992, fell to a low of 4.0% in 2000 and then climbed to 6.0% in 2003. By 2006, it was down to 4.6%.

These recent changes in unemployment rates have narrowed the gap between the two countries. The Canadian rate has been within 1 percentage point of the U.S. rate for the last four years. The last time the gap was so small was in 1982.

The Canadian unemployment rate had been higher than the American rate throughout most of the previous three decades. The gap widened in 1984 and 1985 and again from 1991 to 1999. During these periods, the Canada-U.S. unemployment rate gap ranged between 3 and 4 percentage points.

**Chart C** The unemployment rate gap between the two countries continues to narrow



Note: Canadian data have been adjusted to approximate U.S. measurement concepts.

Sources: Statistics Canada, Labour Force Survey; U.S. Bureau of Labor Statistics, Current Population Survey

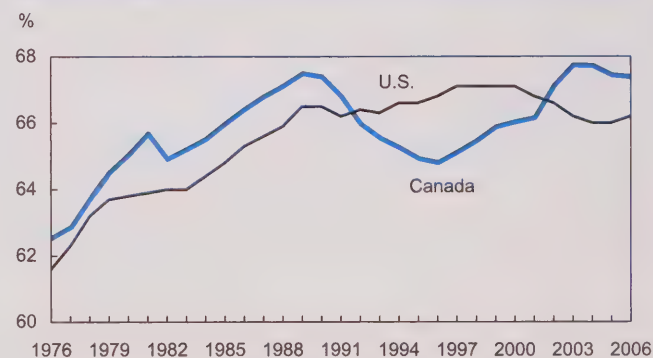
Since 2002, Canadians have been more likely than Americans to participate in the labour market. By 2006, 67.4% of the Canadian population was either employed or searching for work, compared with 66.2% of Americans.

While labour market participation trended up in Canada from 1996 to 2003, a declining proportion of Americans has participated in the labour market since 2001, after peaking at 67.1% from 1997 to 2000.

Since 2000, the participation rate for Canadian men remained constant but increased by 2.6 percentage points for women. American participation rates decreased by 1.3 percentage points for men and less than 1 point for women.

In 2006, Canadian youth were much more likely to be participating in the labour market (70.2%) than American youth (60.6%), whereas the participation rate of older workers (aged 55 and over) in the United States (38.0%) was well ahead of the rate for Canadian older workers (31.9%).

**Chart D** A higher proportion of Canadians than Americans are participating in the labour market



Note: Canadian data have been adjusted to approximate U.S. measurement concepts.

Sources: Statistics Canada, Labour Force Survey; U.S. Bureau of Labor Statistics, Current Population Survey

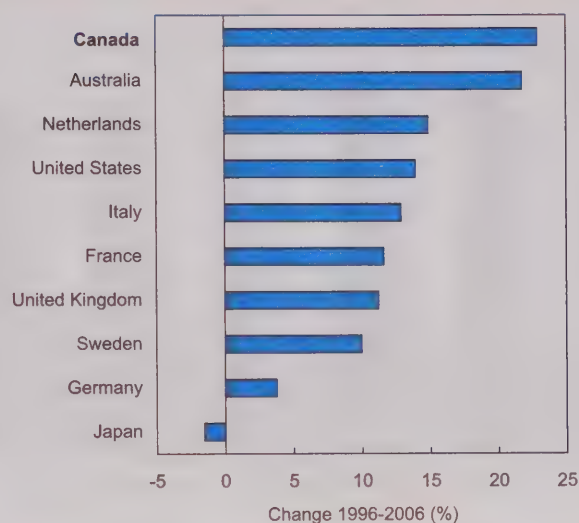


Canada ranked first among 10 countries in employment growth from 1996 to 2006, followed closely by Australia. Japan was the only country to see declines in employment. In service industries, each of the 10 countries enjoyed higher employment during this period, but Canada and Australia enjoyed the strongest growth rates (around 25%) while Japan and Germany had the weakest, between 10% and 14%.

In 2006, Germany (22%) and Italy (21%) had the highest proportion of their employment in manufacturing, while the United States (11%) and Australia (10%) had the lowest. From 1996 to 2006, manufacturing's share of employment fell sharply in the United States (from 16% to 11%), Japan (22% to 18%), Italy (25% to 21%), Sweden (19% to 15%) and the United Kingdom (19% to 13%), while in Canada manufacturing's share of employment fell by 1 percentage point (14% to 13%).

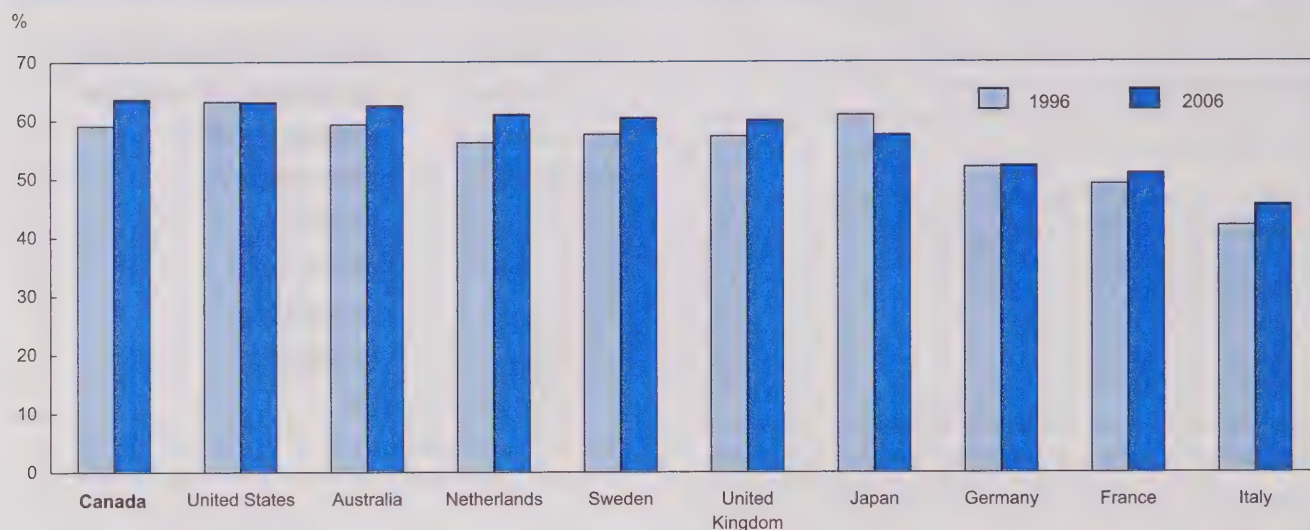
All 10 countries saw employment in primary industries (agriculture, forestry, hunting and fishing) lose share from 1996 to 2006. In Canada, the share fell from 4% to 3%, similar to the declines seen in the remaining countries. Italy, Japan and Australia had the highest share of employment in these industries, about 4% in 2006.

**Chart E Canada's employment growth is tops**



Note: Canadian data have been adjusted to approximate U.S. measurement concepts.

Source: U.S. Bureau of Labor Statistics

**Chart F Canada has the highest employment rate**

Note: Canadian data have been adjusted to approximate U.S. measurement concepts.  
Source: U.S. Bureau of Labor Statistics

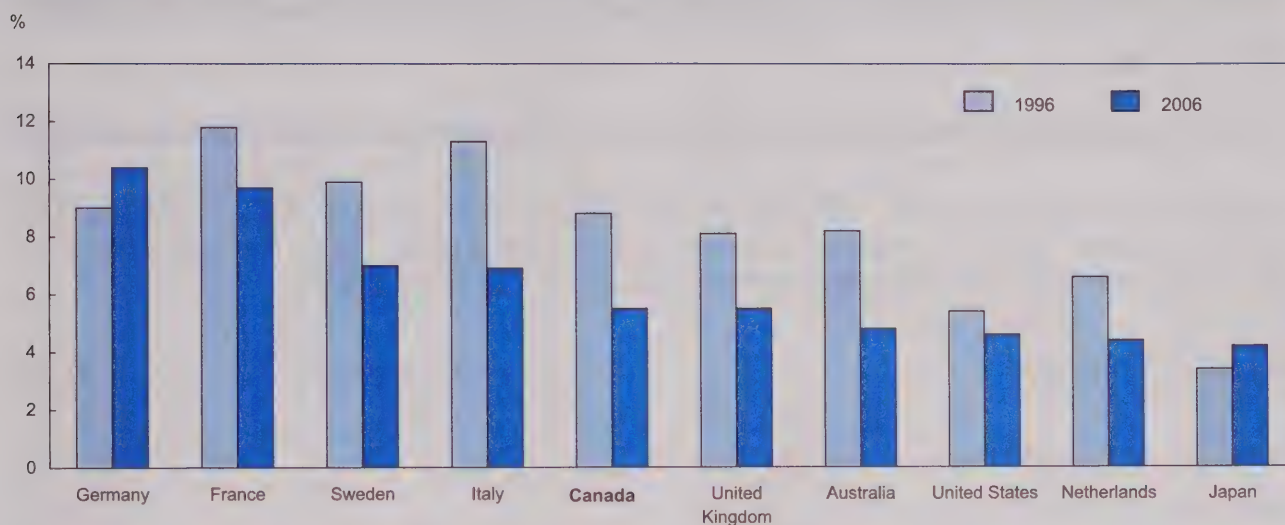
In 2006, Canada had the highest employment rate of the 10 countries examined. For the last four years, Canada has ranked tops among these countries. From 1996 to 2006, Canada's employment rate increased 4.5 percentage points. Australia, Sweden, the United Kingdom, France and Italy all saw rises of 2 to 3 percentage points. However, employment rates fell in Japan (-3.4 percentage points) and the United States (-0.1 point) during this period.

The Netherlands saw the highest increase in its employment rate from 1996 to 2006, 4.8 percentage points, as employment growth of 14.9% far outpaced

working-age population growth of 6.0%. Canada posted healthy employment growth of 22.9% and substantial population growth of 14.1% during this nine-year period.

Since 2003, a higher proportion of women in Canada were working than in any other country, reaching an employment rate of 58.9% in 2006. The United States (56.6%) and Sweden (56.4%) followed. For men, rates were highest in the United States (70.1%), Japan (69.8%), Australia (69.6%), Canada (68.6%) and the Netherlands (68.3%).



**Chart G** Canada's unemployment rate ranks in the middle

Note: Canadian data have been adjusted to approximate U.S. measurement concepts.  
 Source: U.S. Bureau of Labor Statistics

Canada's unemployment rate was in the middle of the pack in 2006: Germany and France had the highest rates, while Japan and the Netherlands posted the lowest. Over the period 1996 to 2006, eight of the ten countries saw decreases in their unemployment rates.

Germany and Japan were the only countries that had increases in their unemployment rates from 1996 to 2006.<sup>1</sup> Japan's unemployment rate rose steadily from the early 1990s onward—by 2002, it reached a record 5.4%. However, the rate declined to 4.2% in 2006.

Germany's rate increased during this period—it declined from 9.0% in 1996 to 7.8% in 2000, then increased to 10.4% in 2006.

Unemployment rates among youth (aged 16 to 24) are generally higher than for other age groups. In 2006, youth unemployment rates in Canada, the United States and Australia were similar, around 10% to 11%. The lowest unemployment rates among youth were in the Netherlands (7.4%) and Japan (8.1%), while the highest were in France, Italy and Sweden (above 20%).

# Cumulative index

1989 to 2007

*This index lists articles published in Perspectives on Labour and Income (Catalogue no. 75-001-XPE) since its inception (Summer 1989) up to and including the latest issue. For further information, call Henry Pold 613-951-4608. The online publication date is shown in parentheses.*

## ABSENCE FROM WORK

Working at home: An update	Autumn 2007 (June 2007)
Trends and seasonality in absenteeism	Autumn 2007 (June 2007)
Increased work stoppages	Autumn 2006 (August 2006)
Is the workplace becoming safer?	Autumn 2006 (July 2006)
On sick leave	Summer 2006 (April 2006)
The labour market in the week of September 11	Winter 2001 (October 2001)
Time lost due to industrial disputes	Autumn 2001 (August 2001)
Missing work in 1998—industry differences	Autumn 1999
Work absences: New data, new insights	Spring 1998
Work absence rates, 1995	Autumn 1996
Work absences and compensation	Autumn 1996
Missing work	Spring 1995
Absences from work revisited	Spring 1992
Taking their leave	Autumn 1989
On maternity leave	Summer 1989

## BENEFITS

Benefits of the job	Summer 2003 (May 2003)
Health-related insurance for the self-employed	Summer 2003 (May 2003)
Benefiting from extended parental leave	Summer 2003 (March 2003)
New maternity and parental benefits	Summer 2003 (March 2003)
Taking stock of equity compensation	Summer 2003 (March 2003)
On non-wage labour income	Winter 1991
The price of labour	Autumn 1990

## CONSUMER SPENDING

Spending patterns in Canada and the U.S.	Winter 2007 (September 2007)
Payday loans	Summer 2007 (April 2007)
Measuring housing affordability	Winter 2006 (November 2006)

Shifts in spending patterns of older Canadians	Spring 2006 (December 2005)
Out-of-pocket spending on prescription drugs	Winter 2005 (September 2005)
Spenders and savers	Summer 2005 (March 2005)
Saving for postsecondary education	Autumn 2004 (July 2004)
Shifts in consumer spending	Autumn 2004 (June 2004)
Fighting the odds	Spring 2004 (December 2003)
Who pays for domestic help?	Autumn 2003 (August 2003)
Falling behind	Autumn 2002 (July 2002)
Update on gambling	Spring 2000
The gambling industry: Raising the stakes	Winter 1998
The RRSP Home Buyers' Plan	Summer 1998
Spending patterns of couples without children	Summer 1994
Tracking down discretionary income	Spring 1991
Consumer spending in urban and rural Canada	Autumn 1990
Where the money goes: Spending patterns in Canada and the U.S.	Autumn 1990

## EARNINGS

Economic integration of immigrants' children	Winter 2007 (October 2007)
Earnings instability	Winter 2006 (October 2006)
Education and earnings	Autumn 2006 (June 2006)
Does it pay to go back to school?	Summer 2006 (March 2006)
Who gains from computer use?	Autumn 2005 (July 2005)
Escaping low earnings	Summer 2005 (April 2005)
Earnings of temporary versus permanent employees	Spring 2005 (January 2005)
Low-paid workers: How many live in low-income families?	Winter 2004 (October 2004)
Minimum wage workers	Summer 2004 (March 2004)



Cumulative earnings among young workers	Winter 2002 (November 2002)
Earnings over time	Winter 2002 (November 2002)
Union wage premium	Winter 2002 (September 2002)
The male-female wage gap	Spring 2002 (December 2001)
Employment and earnings of postsecondary graduates	Autumn 2001
Overqualified? Recent graduates, employer needs	Spring 2001
Provincial earnings differences	Summer 2000
Earnings of lawyers	Spring 2000
Earnings of physicians	Winter 1999
Women's earnings/men's earnings	Winter 1999
Earnings mobility of Canadians, 1982-1992	Summer 1999
Northern earnings and income	Spring 1997
Do earnings rise until retirement?	Summer 1996
Are service jobs low-paying?	Spring 1996
Women as main wage-earners	Winter 1995
Employment prospects for high school graduates	Autumn 1995
Labour market outcomes for university co-op graduates	Autumn 1995
Recent trends in earnings	Autumn 1995
Adults living solo	Winter 1994
A recession for whom?	Winter 1993
A note on wage trends among unionized workers	Autumn 1993
Seven decades of wage changes	Summer 1993
The changing profile of dual-earner families	Summer 1992
On non-wage labour income	Winter 1991
Are jobs in large firms better jobs?	Autumn 1991
Visible minorities in the Canadian labour force	Summer 1991
Women's earnings and family incomes	Summer 1991
Recent trends in wages	Winter 1990
The price of labour	Autumn 1990
Male-female earnings gap among recent university graduates	Summer 1990
The graduates of '82: where are they?	Spring 1990
Wives as primary breadwinners	Spring 1990
Working for minimum wage	Winter 1989
Unionization and women in the service sector	Autumn 1989
Bilingualism and earnings	Summer 1989

## EDUCATION

Education and earnings	Autumn 2006 (June 2006)
Does it pay to go back to school?	Summer 2006 (March 2006)
Who gets student loans?	Summer 2006 (March 2006)
Education and income of lone parents	Spring 2006 (December 2005)
The rising profile of women academics	Spring 2005 (February 2005)
Immigrants: Settling for less?	Autumn 2004 (June 2004)
Barriers to job-related training	Summer 2002 (March 2002)
Liberal arts degrees and the labour market	Autumn 2001 (July 2001)

Employment and earnings of postsecondary graduates	Autumn 2001
Overqualified? Recent graduates, employer needs	Spring 2001
The school-to-work transition	Spring 2000
Paying off student loans	Spring 1999
Facing the future: Adults who go back to school	Autumn 1997
After high school...	Summer 1997
Employment prospects for high school graduates	Autumn 1995
Labour market outcomes for university co-op graduates	Autumn 1995
Work experience	Summer 1995
Youths—waiting it out	Spring 1994
Labour market outcomes for high school leavers	Winter 1993
School, work and dropping out	Summer 1993
Women in academia—a growing minority	Spring 1993
A degree of change	Winter 1992
Juggling school and work	Spring 1992
Lifelong learning: Who goes back to school?	Winter 1991
Overview of literacy skills in Canada	Winter 1990
Male-female earnings gap among recent university graduates	Summer 1990
The graduates of '82: where are they?	Spring 1990

## FAMILIES

Balancing career and care	Winter 2006 (November 2006)
Education and income of lone parents	Spring 2006 (December 2005)
Low-paid workers: How many live in low-income families?	Winter 2004 (October 2004)
The sandwich generation	Winter 2004 (September 2004)
Family wealth across the generations	Winter 2003 (October 2003)
Family spending power	Winter 2002 (October 2002)
Families on the financial edge	Autumn 2002 (July 2002)
Low income intensity: urban and rural families	Autumn 2001 (June 2001)
Experiencing low income for several years	Summer 2001 (March 2001)
Part-time by choice	Spring 2001 (November 2000)
Working together—self-employed couples	Winter 1999
Employment after childbirth	Autumn 1999
Family income: 25 years of stability and change	Spring 1999
Family income inequality, 1970-1995	Winter 1998
Couples working shift	Autumn 1998
Retirement patterns of working couples	Autumn 1998
Income after separation—people without children	Summer 1998
Stay-at-home dads	Spring 1998
Intergenerational equity in Canada	Autumn 1997
Family income after separation	Summer 1997
Transfer payments to families with children	Autumn 1996
Dual-pensioner families	Autumn 1996
The many faces of unemployment	Spring 1996

Women as main wage-earners	Winter 1995
Families and moonlighting	Summer 1995
Hours of working couples	Summer 1995
Work and low income	Summer 1995
Adults living solo	Winter 1994
High income families	Winter 1994
Left behind: Lone mothers in the labour market	Summer 1994
Spending patterns of couples without children	Summer 1994
Balancing work and family responsibilities	Spring 1994
Family facts (charts)	Spring 1994
Employed parents and the division of housework	Autumn 1993
Female lone parents in the labour market	Spring 1993
Alimony and child support	Summer 1992
The changing profile of dual-earner families	Summer 1992
Marriage, money and retirement	Winter 1991
Family income inequality in the 1980s	Autumn 1991
Who's looking after the kids? Child care arrangements of working mothers	Summer 1991
Women's earnings and family incomes	Summer 1991
Tracking down discretionary income	Spring 1991
Government transfer payments and family income	Autumn 1990
Where the money goes: Spending patterns in Canada and the U.S.	Autumn 1990
Work and relative poverty	Summer 1990
Wives as primary breadwinners	Spring 1990

## GOVERNMENT TRANSFER PAYMENTS

The GST credit	Autumn 2006 (June 2006)
Who's missing out on the GIS?	Winter 2005 (October 2005)
Low income intensity: urban and rural families	Autumn 2001 (June 2001)
Repeat users of employment insurance	Summer 2001 (April 2001)
Family income inequality, 1970-1995	Winter 1998
Intergenerational equity in Canada	Autumn 1997
Transfer payments to families with children	Autumn 1996
Men retiring early: How are they doing?	Winter 1995
Who gets UI?	Summer 1994
Family income inequality in the 1980s	Autumn 1991
Dependence on government transfer payments, 1971-1989	Summer 1991
Taxes, transfers and regional disparities	Winter 1990
Government transfer payments and family income	Autumn 1990

## HEALTH

Depression at work	Winter 2007 (November 2007)
Aging, health and work	Spring 2006 (February 2006)
Disability in the workplace	Spring 2006 (February 2006)
Job strain and retirement	Autumn 2005 (July 2005)
Fighting the odds	Spring 2004 (December 2003)
Sources of workplace stress	Autumn 2003 (June 2003)

Long working hours and health	Spring 2000
You wear it well: Health of older workers	Autumn 1996
A job to die for	Summer 1996
Tired workers	Summer 1995
Perceptions of workplace hazards	Spring 1994
Defining and measuring employment equity	Winter 1993
Back injuries at work, 1982-1990	Autumn 1992
Under the influence	Autumn 1990
Disabled workers	Winter 1989

## HIGH TECHNOLOGY

Life after high tech	Autumn 2007 (July 2007)
Who gains from computer use?	Autumn 2005 (July 2005)
High-tech—two years after the boom	Winter 2003 (November 2003)
Information technology workers	Autumn 2003 (July 2003)
Working smarter	Winter 2002
Better jobs in the new economy?	Autumn 2002 (July 2002)
High-tech boom and bust	Summer 2002 (April 2002)
Working with computers	Summer 2001 (May 2001)
The booming market for programmers	Summer 1998
Computers in the workplace	Summer 1997
The future of data dissemination	Summer 1996
Computers in the workplace	Summer 1991
Measuring Canada's international competitiveness	Summer 1990
High technology at work	Spring 1990

## IMMIGRANTS

Immigrants: Settling for less?	Autumn 2004 (June 2004)
Low income among immigrants and visible minorities	Summer 2004 (April 2004)
Knowledge workers on the move	Summer 2000
Canada's newest workers	Spring 1995
Defining and measuring employment equity	Winter 1993
The census: One hundred years ago	Summer 1991
Visible minorities in the Canadian labour force	Summer 1991
Gail Cook Johnson speaks out on human resource issues	Spring 1991
Immigrants in product fabricating	Winter 1989

## INCOME

High-income Canadians	Winter 2007 (September 2007)
2002 income: an overview	Winter 2004 (November 2004)
Low-paid workers: How many live in low-income families?	Winter 2004 (October 2004)
Low income in census metropolitan areas	Summer 2004 (May 2004)
Income replacement among recent widows	Summer 2004 (May 2004)
Low income among immigrants and visible minorities	Summer 2004 (April 2004)



Finances in the golden years	Winter 2003	Job stability	Winter 1998
2000 income: An overview	(November 2003)	The gambling industry: Raising the stakes	Winter 1998
	Spring 2003	Sizing up employment in clothing manufacturing	Spring 1997
	(January 2003)	Work absence rates, 1995	Autumn 1996
Income and wealth	Winter 2002	A sure bet industry	Autumn 1996
	(November 2002)	Are service jobs low-paying?	Spring 1996
Families on the financial edge	Autumn 2002	Recent trends in earnings	Autumn 1995
	(July 2002)	Hiring difficulties in manufacturing	Summer 1995
Housing: An income issue	Autumn 2002	Missing work	Spring 1995
	(June 2002)	The horseless carriage	Spring 1995
1999 income: an overview	Winter 2001	Three large urban areas in transition	Winter 1994
	(November 2001)	A recession for whom?	Winter 1993
Low income intensity: urban and rural families	Autumn 2001	A note on tracking employment in manufacturing	Summer 1993
	(June 2001)	International employment trends by industry—a note	Summer 1993
Experiencing low income for several years	Summer 2001	The renaissance of self-employment	Summer 1993
	(March 2001)	Are single industry towns diversifying? A look at fishing, mining and wood-based communities	Spring 1992
Repeat users of employment insurance	Summer 2001	Immigrants in product fabricating	Winter 1989
	(April 2001)	The Canadian auto industry, 1978-1986	Autumn 1989
Incomes of younger retired women: the past 30 years	Winter 2000		
	(December 2000)		
Incomes of seniors	Winter 2000		
Income inequality within provinces	Winter 2000		
	(November 2000)		
Family income: 25 years of stability and change	Spring 1999		
Income transition upon retirement	Winter 1998		
Family income inequality, 1970-1995	Winter 1998		
Income after separation—people without children	Summer 1998		
Family income after separation	Summer 1997		
Northern earnings and income	Spring 1997		
Transfer payments to families with children	Autumn 1996		
Dual-pensioner families	Autumn 1996		
Men retiring early: How are they doing?	Winter 1995		
Work and low income	Summer 1995		
High income families	Winter 1994		
Who gets UI?	Summer 1994		
Income facts (charts)	Autumn 1993		
Investment income of Canadians	Summer 1993		
Facing retirement	Spring 1993		
Alimony and child support	Summer 1992		
Hard at work	Spring 1992		
Family income inequality in the 1980s	Autumn 1991		
Dependence on government transfer payments, 1971-1989	Summer 1991		
Women's earnings and family incomes	Summer 1991		
Work and relative poverty	Summer 1990		
<b>INDUSTRIES</b>		<b>INTERNATIONAL COMPARISONS</b>	
Fuelling the economy	Summer 2007	How Canada compares in the G8	Autumn 2005
	(May 2007)		(June 2005)
Payday loans	Summer 2007	The labour market: Up north, down south	Spring 2003
	(April 2007)		(December 2002)
Business support services	Summer 2005	Recent trends in taxes internationally	Spring 2001
	(May 2005)		(January 2001)
Better jobs in the new economy?	Autumn 2002	Taxes internationally	Autumn 2000
	(July 2002)	Income taxes in Canada and the United States	Summer 2000
High-tech boom and bust	Summer 2002	Knowledge workers on the move	Summer 2000
	(April 2002)	Self-employment in Canada and the United States	Autumn 1999
Update on gambling	Spring 2000	An international comparison of employee training	Spring 1998
Missing work in 1998—industry differences	Autumn 1999	International survey on adult literacy	Summer 1996
		The marginally literate workforce	Summer 1996
		International facts (charts)	Summer 1994
		International employment trends by industry—a note	Summer 1993
		Gail Cook Johnson speaks out on human resource issues	Spring 1991
		Labour force participation: An international comparison	Winter 1990
		Training the work force: A challenge facing Canada in the '90s	Winter 1990
		Where the money goes: Spending patterns in Canada and the U.S.	Autumn 1990
		Dependency ratios: An international comparison	Summer 1990
		Measuring Canada's international competitiveness	Summer 1990
		The distribution of wealth in Canada and the United States	Spring 1990
		<b>INTERVIEWS</b>	
		David Foot discusses career paths	Winter 1994
		An interview with Laurence E. Coward	Winter 1993
		Dian Cohen on the new economy	Summer 1993
		Gail Cook Johnson speaks out on human resource issues	Spring 1991

**LABOUR MARKET**

Participation of older workers	Autumn 2007 (August 2007)
Labour inputs to non-profit organizations	Autumn 2007 (June 2007)
The Aboriginal labour force in Western Canada	Spring 2007 (January 2007)
The core-age labour force	Winter 2006 (September 2006)
Screening job applicants	Summer 2006 (May 2006)
Recent changes in employment by industry	Spring 2006 (January 2006)
Youth and the labour market	Winter 2005 (November 2005)
The labour market in 2004	Spring 2005 (February 2005)
The labour market in 2003	Spring 2004 (January 2004)
Precarious jobs: A new typology of employment	Winter 2003 (October 2003)
Quality of jobs added in 2002	Spring 2003 (February 2003)
2002—a good year in the labour market	Spring 2003 (January 2003)
The labour market: Up north, down south	Spring 2003 (December 2002)
The labour market: Year-end review 2001	Spring 2002 (January 2002)
The labour market in the week of September 11	Winter 2001 (October 2001)
Liberal arts degrees and the labour market	Autumn 2001 (July 2001)
Demography and the labour market	Spring 2001 (February 2001)
Help-wanted Index	Summer 2000
Seasonality in employment	Spring 1999
Labour force participation in the 1990s	Autumn 1998
Working overtime in today's labour market	Winter 1997
The labour market: Mid-year review	Autumn (1989 to 1997)
The labour market: Year-end review	Spring (1989 to 1997, 2001) (January 2001)
Employment and industrial development in the North	Spring 1997
Another measure of employment	Winter 1996
Greying of the workforce	Spring 1995
Dian Cohen on the new economy	Summer 1993
The labour force: into the '90s	Spring 1990
Job ads: A leading indicator?	Autumn 1989

**LABOUR MOBILITY**

Permanent layoff rates	Summer 2004 (March 2004)
After the layoff	Winter 2001 (October 2001)
Job stability	Winter 1998
An overview of permanent layoffs	Autumn 1997
Changes in job tenure	Winter 1996
Hiring difficulties in manufacturing	Summer 1995
Job-related moves	Winter 1992
Staying put: Job tenure among paid workers	Winter 1992

Workers on the move: Permanent layoffs	Autumn 1992
Workers on the move: Quits	Autumn 1992
Workers on the move: An overview of labour turnover	Summer 1992
Workers on the move: Hirings	Summer 1992

**LITERACY**

Literacy and employability	Summer 2007 (March 2007)
Literacy in the workplace	Summer 1999
International survey on adult literacy	Summer 1996
The marginally literate workforce	Summer 1996
Literacy in the workplace	Spring 1992
Gail Cook Johnson speaks out on human resource issues	Spring 1991
Overview of literacy skills in Canada	Winter 1990
Training the work force: A challenge facing Canada in the '90s	Winter 1990

**MEN**

Converging gender roles	Autumn 2006 (July 2006)
Men 55 and older: Work or retire?	Spring 2003 (December 2002)
Women's earnings/men's earnings	Winter 1999
Working past age 65	Summer 1999
Stay-at-home dads	Spring 1998
Do earnings rise until retirement?	Summer 1996
Men retiring early: How are they doing?	Winter 1995
Employed parents and the division of housework	Autumn 1993
Trading places: Men and women in non-traditional occupations, 1971-86	Summer 1990
Male-female earnings gap among recent university graduates	Summer 1990

**OCCUPATIONS**

On the road again	Spring 2006 (January 2006)
Employment trends in nursing	Winter 2004 (November 2004)
Health care professionals	Spring 2004 (December 2003)
Farmers leaving the field	Spring 2002 (February 2002)
Earnings of lawyers	Spring 2000
Earnings of physicians	Winter 1999
Work patterns of truck drivers	Winter 1999
Private security and public policing	Spring 1999
Computer programmers	Autumn 1998
The booming market for programmers	Summer 1998
The diversity of managers	Winter 1996
Work absence rates, 1995	Autumn 1996
Women in non-traditional occupations	Autumn 1995
Employer-supported training—it varies by occupation	Spring 1994
Unemployment—occupation makes a difference	Winter 1991
Trading places: Men and women in non-traditional occupations, 1971-86	Summer 1990



**PENSIONS**

Pensions and retirement savings of families	Winter 2007 (November 2007)
Public pensions and work	Autumn 2007 (August 2007)
Early pensioners	Spring 2007 (February 2007)
Cracking the RRSP nest egg	Summer 2006 (April 2006)
Using RRSPs before retirement	Spring 2005 (December 2004)
Retirement plan awareness	Spring 2004 (January 2004)
A C/QPP overview	Spring 2004 (January 2004)
Profiling RRSP contributors	Spring 2003 (January 2003)
Pensions: Immigrants and visible minorities	Autumn 2002 (June 2002)
Private pension savings, 1999	Spring 2002 (December 2001)
Who contributes to RRSPs? A re-examination	Autumn 2001 (July 2001)
Pension coverage and retirement savings	Summer 2001
Incomes of younger retired women: the past 30 years	Winter 2000 (December 2000)
In for the long term: pension plans offered by employers	Winter 2000 (October 2000)
Incomes of seniors	Winter 2000
RRSPs in the 1990s	Spring 2000
Saving for retirement: RRSPs and RPPs	Summer 1999
The RRSP Home Buyers' Plan	Summer 1998
RRSP contributions and withdrawals: An update	Spring 1998
Tapping unused RRSP room	Spring 1998
Low incomes and RRSPs	Spring 1997
RRSP participation—the sooner the better	Spring 1997
RRSP withdrawals revisited	Winter 1996
RRSP rollovers	Winter 1996
Dual-pensioner families	Autumn 1996
Pension fact or fiction?	Summer 1996
Men retiring early: How are they doing?	Winter 1995
RRSPs—unused opportunities	Winter 1995
Tax assistance for pensions and RRSPs	Winter 1995
Who's saving for retirement?	Winter 1995
Pension plan potpourri	Summer 1995
Greying of the workforce	Spring 1995
Update on RRSP contributions	Spring 1995
Greying of the workforce (charts)	Winter 1994
RRSP withdrawals	Spring 1994
An interview with Laurence E. Coward	Winter 1993
RRSPs—new rules, new growth	Winter 1993
C/QPP costs and private pensions	Autumn 1993
Facing retirement	Spring 1993
Note on RRSP contributions and payouts	Spring 1993
Employer-sponsored pension plans—who is covered?	Winter 1992
RRSPs—not just for retirement	Winter 1992
Marriage, money and retirement	Winter 1991
On non-wage labour income	Winter 1991
Women and RRSPs	Winter 1991
Are jobs in large firms better jobs?	Autumn 1991

Retirement attitudes, plans and behaviour	Autumn 1991
The pension carrot: Incentives to early retirement	Autumn 1991
Women approaching retirement	Autumn 1991
Dependence on government transfer payments, 1971-1989	Summer 1991
RRSPs: Tax-assisted retirement savings	Winter 1990
Taxes, transfers and regional disparities	Winter 1990
Government transfer payments and family income	Autumn 1990
The performance of trustee pension funds	Spring 1990

**PRODUCTIVITY**

GDP and employment growth	Summer 2007 (March 2007)
Whither the workweek?	Autumn 2005 (June 2005)
Productivity and prosperity in the information age	Autumn 2003 (June 2003)
Exports, GDP and jobs	Winter 1999
Measuring productivity	Spring 1995
About productivity	Spring 1993

**REGIONAL ANALYSIS**

Is the workplace becoming safer?	Autumn 2006 (July 2006)
Low income in census metropolitan areas	Summer 2004 (May 2004)
Income inequality within provinces	Winter 2000 (November 2000)
Rural roots	Autumn 2000
Provincial earnings differences	Summer 2000
Payroll taxes—structure and statutory parameters	Summer 2000
Regional disparities and non-permanent employment	Winter 1997
Employment and industrial development in the North	Spring 1997
Northern earnings and income	Spring 1997
A job to die for	Summer 1996
Canada's unemployment mosaic in the 1990s	Spring 1996
Full-year employment across the country	Autumn 1995
Are single industry towns diversifying? A look at fishing, mining and wood-based communities	Spring 1992
Visible minorities in the Canadian labour force	Summer 1991
Taxes, transfers and regional disparities	Winter 1990
Consumer spending in urban and rural Canada	Autumn 1990
Shifting patterns of unemployment distribution since the 1960s	Autumn 1990
Bilingualism and earnings	Summer 1989
Canada's unemployment mosaic	Summer 1989

**RETIREMENT**

Early pensioners	Spring 2007 (February 2007)
Defining retirement	Spring 2007 (February 2007)
Post-retirement employment	Winter 2005 (September 2005)
Job strain and retirement	Autumn 2005 (July 2005)

Retaining older workers	Winter 2004 (October 2004)
The near-retirement rate	Spring 2004 (February 2004)
Finances in the golden years	Winter 2003 (November 2003)
The retirement wave	Spring 2003 (February 2003)
Men 55 and older: Work or retire?	Spring 2003 (December 2002)
Older workers and the labour market	Spring 2003 (December 2002)
Approaching retirement	Winter 2002 (September 2002)
Private pension savings, 1999	Spring 2002 (December 2001)
Early retirement trends	Winter 2001 (September 2001)
Demography and the labour market	Spring 2001 (February 2001)
Incomes of younger retired women: the past 30 years	Winter 2000 (December 2000)
Incomes of seniors	Winter 2000
Working past age 65	Summer 1999
Saving for retirement: RRSPs and RRP	Summer 1999
Income transition upon retirement	Winter 1998
Retirement patterns of working couples	Autumn 1998
Measuring the age of retirement	Summer 1997
RRSP rollovers	Winter 1996
Dual-pensioner families	Autumn 1996
Do earnings rise until retirement?	Summer 1996
Men retiring early: How are they doing?	Winter 1995
Greying of the workforce	Spring 1995
Greying of the workforce (charts)	Winter 1994
A note on the recession and early retirement	Winter 1993
An interview with Laurence E. Coward	Winter 1993
Facing retirement	Spring 1993
Marriage, money and retirement	Winter 1991
Retirement attitudes, plans and behaviour	Autumn 1991
The pension carrot: Incentives to early retirement	Autumn 1991
Women approaching retirement	Autumn 1991

## SENIORS

Shifts in spending patterns of older Canadians	Spring 2006 (December 2005)
Who's missing out on the GIS?	Winter 2005 (October 2005)
Housing costs of elderly families	Autumn 2004 (July 2004)
More seniors at work	Spring 2004 (February 2004)
Finances in the golden years	Winter 2003 (November 2003)
Seniors at work	Summer 2002 (May 2002)
Incomes of younger retired women: the past 30 years	Winter 2000 (December 2000)
Incomes of seniors	Winter 2000
Working past age 65	Summer 1999
Dual-pensioner families	Autumn 1996

## TAXES

Property taxes relative to income	Summer 2005 (March 2005)
Housing costs of elderly families	Autumn 2004 (July 2004)
Property taxes	Autumn 2003 (July 2003)
Recent trends in taxes internationally	Spring 2001 (January 2001)
Taxes internationally	Autumn 2000
Payroll taxes—recent trends	Autumn 2000
Payroll taxes—structure and statutory parameters	Summer 2000
Income taxes in Canada and the United States	Winter 1998
Family income inequality, 1970-1995	Summer 1998
The RRSP Home Buyers' Plan	Autumn 1991
Family income inequality in the 1980s	Winter 1990
Taxes, transfers and regional disparities	Autumn 1990
Consumer spending in urban and rural Canada	Autumn 1990
Where the money goes: Spending patterns in Canada and the U.S.	

## TRAINING

Training through the ages	Winter 2006 (October 2006)
Working smarter	Winter 2002
Barriers to job-related training	Summer 2002 (March 2002)
Literacy in the workplace	Summer 1999
An international comparison of employee training	Spring 1998
Facing the future: Adults who go back to school	Autumn 1997
A note on the self-initiated training of job-losers	Spring 1994
Employer-supported training—it varies by occupation	Spring 1994
Recent information on training	Spring 1994
Studying on the job	Summer 1992
Apprentices: Graduate and drop-out labour market performances	Spring 1991
Gail Cook Johnson speaks out on human resource issues	Spring 1991
Training the work force: A challenge facing Canada in the '90s	Winter 1990

## UNEMPLOYMENT

Canada's unemployment mosaic, 2000 to 2006	Spring 2007 (January 2007)
Unemployment since 1971	Summer 2006 (May 2006)
Looking, and looking, for work	Summer 2005 (May 2005)
Sidelined in the labour market	Summer 2004 (April 2004)
Seasonal work and Employment Insurance use	Winter 2003 (September 2003)
Trends in part-time job search	Winter 2001 (November 2001)
Repeat users of employment insurance	Summer 2001 (April 2001)
Unemployment kaleidoscope	Autumn 2000
Obtaining a job	Spring 1999



Looking for work	Autumn 1998
Employment Insurance in Canada: Policy changes	Summer 1998
The redistribution of overtime hours	Winter 1997
Facing the future: Adults who go back to school	Autumn 1997
Canada's unemployment mosaic in the 1990s	Spring 1996
The many faces of unemployment	Spring 1996
Who gets UI?	Summer 1994
A note on the self-initiated training of job-losers	Spring 1994
Alternative measures of unemployment	Winter 1992
A note on Canadian unemployment since 1921	Autumn 1992
Discouraged workers—where have they gone?	Autumn 1992
Unemployment—occupation makes a difference	Winter 1991
Then and now: The changing face of unemployment	Spring 1991
Shifting patterns of unemployment distribution since the 1960s	Autumn 1990
Time lost: An alternative view of unemployment	Spring 1990
Unemployment: A tale of two sources	Winter 1989
"Discouraged workers"	Autumn 1989
Canada's unemployment mosaic	Summer 1989

## UNIONIZATION

Collective bargaining priorities	Autumn 2005 (August 2005)
Diverging trends in unionization	Summer 2005 (April 2005)
The union movement in transition	Autumn 2004 (August 2004)
Unionization and the grievance system	Autumn 2003 (August 2003)
Union wage premium	Winter 2002 (September 2002)
Unionization and fringe benefits	Autumn 2002 (August 2002)
Time lost due to industrial disputes	Autumn 2001 (August 2001)
Non-unionized but covered by collective agreement	Autumn 2000
Unionization—an update	Autumn 1999
Unionization in Canada: A retrospective	Summer 1999 (Supplement)
The rise of unionization among women	Winter 1998
A statistical portrait of the trade union movement	Winter 1997
Unionized workers	Spring 1996
A note on wage trends among unionized workers	Autumn 1993
Are jobs in large firms better jobs?	Autumn 1991
Working for minimum wage	Winter 1989
Unionization and women in the service sector	Autumn 1989

## VOLUNTEERING

Labour inputs to non-profit organizations	Autumn 2007 (June 2007)
Volunteering on company time	Summer 2003 (April 2003)
Youth volunteering on the rise	Spring 2000
Seniors who volunteer	Autumn 1999
The gift of time	Summer 1990

## WEALTH

Revisiting wealth inequality	Spring 2007 (December 2006)
Wealth inequality by province	Winter 2004 (September 2004)
Family wealth across the generations	Winter 2003 (October 2003)
Income and wealth	Winter 2002 (November 2002)
Wealth inequality	Spring 2002 (February 2002)
The distribution of wealth in Canada and the United States	Spring 1990

## WOMEN

Wives as primary breadwinners	Autumn 2006 (August 2006)
Converging gender roles	Autumn 2006 (July 2006)
The rising profile of women academics	Spring 2005 (February 2005)
Income replacement among recent widows	Summer 2004 (May 2004)
The male-female wage gap	Spring 2002 (December 2001)
Incomes of younger retired women: the past 30 years	Winter 2000 (December 2000)
Women's earnings/men's earnings	Winter 1999
Employment after childbirth	Autumn 1999
Baby boom women—then and now	Autumn 1999
The rise of unionization among women	Winter 1998
Women entrepreneurs	Spring 1996
Women as main wage-earners	Winter 1995
Adult women's participation rate at a standstill	Autumn 1995
Women in non-traditional occupations	Autumn 1995
Baby boom women	Winter 1994
Work-related sexual harassment	Winter 1994
Declining female labour force participation	Summer 1994
Left behind: Lone mothers in the labour market	Summer 1994
Balancing work and family responsibilities	Spring 1994
Defining and measuring employment equity	Winter 1993
Employed parents and the division of housework	Autumn 1993
Female lone parents in the labour market	Spring 1993
Women in academia—a growing minority	Spring 1993
A degree of change	Winter 1992
Alimony and child support	Summer 1992
Absences from work revisited	Spring 1992
Women and RRSPs	Winter 1991
Women approaching retirement	Autumn 1991
Who's looking after the kids? Child care arrangements of working mothers	Summer 1991
Women's earnings and family incomes	Summer 1991
Male-female earnings gap among recent university graduates	Summer 1990
Trading places: Men and women in non-traditional occupations, 1971-86	Summer 1990
Wives as primary breadwinners	Spring 1990
Unionization and women in the service sector	Autumn 1989
On maternity leave	Summer 1989

**WORK ARRANGEMENTS**

Working at home: An update	Autumn 2007 (June 2007)
Work hours instability	Spring 2007 (December 2006)
Whither the workweek?	Autumn 2005 (June 2005)
Earnings of temporary versus permanent employees	Spring 2005 (January 2005)
Duration of non-standard work	Spring 2005 (December 2004)
Retaining older workers	Winter 2004 (October 2004)
Precarious jobs: A new typology of employment	Winter 2003 (October 2003)
Duration of multiple jobholding	Summer 2002 (April 2002)
Evolution of the Canadian workplace: work from home	Winter 2001 (September 2001)
Trends in part-time work	Summer 2001 (April 2001)
Part-time by choice	Spring 2001 (November 2000)
Long working hours and health	Spring 2000
Working together—self-employed couples	Winter 1999
Self-employment in Canada and the United States	Autumn 1999
Working past age 65	Summer 1999
Hours polarization at the end of the 1990s	Summer 1999
Couples working shift	Autumn 1998
Home-based entrepreneurs	Autumn 1998
Moonlighting: A growing way of life	Summer 1998
Working at home	Summer 1998
Regional disparities and non-permanent employment	Winter 1997
Working more? Less? What do workers prefer?	Winter 1997
Working overtime in today's labour market	Winter 1997
Non-permanent paid work	Autumn 1997
Job sharing	Summer 1997
Work arrangements: 1995 overview	Spring 1997
Women entrepreneurs	Spring 1996
Non-standard work on the rise	Winter 1995
Full-year employment across the country	Autumn 1995
Families and moonlighting	Summer 1995
Hours of working couples	Summer 1995

Work experience	Summer 1995
Ever more moonlighters	Autumn 1994
Involuntary part-timers	Autumn 1994
Jobs! Jobs! Jobs!	Autumn 1994
The hours people work	Autumn 1994
Voluntary part-time workers	Autumn 1994
Getting there	Summer 1994
Weekend workers	Summer 1994
Working "9 to 5"	Summer 1994
Balancing work and family responsibilities	Spring 1994
Flexitime work arrangements	Autumn 1993
Paid overtime	Autumn 1993
Work arrangements of Canadians—an overview	Autumn 1993
Working shift	Spring 1993
Hard at work	Spring 1992
A note on self-employment	Winter 1991
A note on the Work Sharing Program	Winter 1991
Non-standard work arrangements	Winter 1991
Moonlighters	Winter 1989
The changing face of temporary help	Summer 1989

**YOUTH**

The busy lives of teens	Summer 2007 (May 2007)
Youth and the labour market	Winter 2005 (November 2005)
Liberal arts degrees and the labour market	Autumn 2001 (July 2001)
Employment and earnings of postsecondary graduates	Autumn 2001
Rural roots	Autumn 2000
Youth volunteering on the rise	Spring 2000
The school-to-work transition	Spring 2000
After high school...	Summer 1997
Labour market outcomes for university co-op graduates	Autumn 1995
Youths—waiting it out	Spring 1994
Labour market outcomes for high school leavers	Winter 1993
School, work and dropping out	Summer 1993
A degree of change	Winter 1992
Juggling school and work	Spring 1992
Apprentices: Graduate and drop-out labour market performances	Spring 1991
Working for minimum wage	Winter 1989
Youth for hire	Summer 1989



# WHAT IF...



**WHAT IF** there were a place that could save you and your business time and money by offering a consolidated area with the latest in Canadian statistics?

**WHAT IF** there were a place that offered accessible and reliable data on an assortment of current hot topics on Canadian social and economic themes?

**WHAT IF** there were a place where analysis experts that know your markets could provide you with advice and customized data at your fingertips?

**WHAT IF** there were such a place?

**THERE IS SUCH A PLACE.**



**[www.statcan.ca](http://www.statcan.ca)**  
**BUILT FOR BUSINESS**

The official source of Canadian statistics  
All the time — All in one place

# PERSPECTIVES

ON LABOUR AND INCOME

## To keep up with ...

- the distribution of income and trends in wages in the country
- the education levels and the training of the labour force in Canada
- updates on research under way in the labour and income field
- the availability of new income and labour market data

## ... you need

**PERSPECTIVES ON LABOUR AND INCOME** (Catalogue no. 75-001-XPE) from Statistics Canada.

A yearly subscription to **Perspectives on Labour and Income** (four issues) costs just \$63.

Mail your order to Statistics Canada, Finance Division, R.H. Coats Bldg., 6th floor, 100 Tunney's Pasture Driveway, Ottawa, Ontario K1A 0T6. Or fax 1 877 287-4369 (Canada and United States) or call 1 800 267-6677 (Canada and United States) and use your VISA or MasterCard, or e-mail [infostats@statcan.ca](mailto:infostats@statcan.ca)













